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JOURNAL OF THE TRANSACTIONS
OF
THE VICTORIA INSTITUTE.

VOL. XLVII.

ST. MARTIN'S LANE
HARRISON AND SONS, PRINTERS
IN ORDINARY TO HIS MAJESTY,

LONDON :
HARRISON AND SONS, PRINTERS IN ORDINARY TO HIS MAJESTY,
ST. MARTIN'S LANE.

PREFACE.

DURING the past year the shadow of the Great War has rested upon us all. To some it has meant bereavement, to others financial loss and anxiety, to everyone constant pre-occupation. The Victoria Institute could not hope to escape. Some of its supporters have found themselves obliged to diminish their subscriptions or even to withdraw them altogether.

Nevertheless, in spite of these and other hindrances, the record of the past Session is most encouraging. The removal to new quarters has resulted in a great advantage, and the rooms in the Central Hall, Westminster, available for our Meetings, have proved much more comfortable and commodious than the premises which we formerly occupied.

Thirteen Meetings were held during the Session instead of the usual twelve, and all of them have been well attended, some of them exceptionally so.

The papers read have all been of importance, and have covered a wide field of research and thought. The Theory of Evolution in its two chief aspects has been passed in review by two well-known scientific men :—Professor Ernest MacBride, F.R.S., treating of the Present Position of the Theory of Organic Evolution, while Professor Alfred Fowler, F.R.S., dealt in a similar comprehensive manner with Inorganic Evolution: the Development of Stars and Nebulæ. Two special applications of science having a bearing upon sacred and ecclesiastical history were dealt with by Professor Archibald R. S. Kennedy, and Dr. A. M. W. Downing, F.R.S., respectively; the former in his address on Weights and Measures of the Hebrews; the latter in his survey of the history and significance of the present Ecclesiastical Calendar. This last rests upon the Jewish

Calendar, which supplied Mrs. Maunder with her chief criterion for determining the date and place of some of the more important pseudepigraphical books, such as the Book of Enoch, and for establishing their dependence upon Persian rather than upon Jewish influences. This paper was most appropriately followed by Professor J. Hope Moulton's discussion on "The Zoroastrian Doctrine of a Future Life," which, in its turn, admirably prepared the way for Dr. St. Clair Tisdall's exposition of Mahâyâna Buddhism. The Rev. D. Gath Whitley drew from the vestiges which primeval man has left behind him evidence that even in the Pleistocene Period man was not devoid of some kind of religious belief; while, on the other hand, Canon McClure summarized the principal features of the decadent attitude adopted by some in our own days, and contended that Modernism had departed widely from primitive Christianity. Three further papers touched in different ways on that literary disintegration of Scripture which has been carried out under the name of the Higher Criticism. Professor Margoliouth dealt with this kind of analysis as it has been applied to the works of Homer, and maintained, as against it, the unity of authorship of the Homeric poems. Dr. T. G. Pinches drew attention to the Old and New Babylonian records of the Creation and the Flood, showing a parallelism to the records in Genesis. While in the Annual Address which concluded the Session, Professor H. Edouard Naville demonstrated how strong was the internal evidence that the Book of Genesis was essentially the work of a single author.

The papers, therefore, were either themselves original researches of importance or valuable reviews of certain intellectual movements; and the discussions to which they gave rise have often usefully supplemented the papers themselves.

The Institute is greatly indebted to the distinguished Authors who, during a time of universal strain and distress, have given such important assistance to the objects and purpose of the Institute.

E. WALTER MAUNDER, *Editor*.

September, 1915.

CONTENTS.

	PAGE
PREFACE	v
REPORT OF THE COUNCIL FOR THE YEAR 1914... ..	1
CASH STATEMENT FOR THE YEAR 1914	8
ANNUAL GENERAL MEETING, HELD ON MONDAY, FEBRUARY 1ST, 1915, MR. DAVID HOWARD, V.P., IN THE CHAIR	9
THE PRINCIPLES OF WORLD EMPIRE. BY E. WALTER MAUNDER, F.R.A.S.	11
THE LIFE AND WORK OF HOMER. BY THE REV. D. S. MARGO- LIOUTH, D.LITT.; LAUDIAN PROFESSOR OF ARABIC IN THE UNIVERSITY OF OXFORD	35
MODERNISM AND TRADITIONAL CHRISTIANITY. BY THE REV. CANON E. McCLURE, M.A., M.R.I.A.	55
PRESENT POSITION OF THE THEORY OF ORGANIC EVOLUTION. BY PROFESSOR ERNEST W. MACBRIDE, M.A., F.R.S.	93
TRACES OF A RELIGIOUS BELIEF OF PRIMEVAL MAN. BY THE REV. D. GATH WHITLEY	125
THE SPECTRA OF STARS AND NEBULÆ. BY PROFESSOR A. FOWLER, F.R.S. (<i>Abstract</i>)	149
THE DETERMINATION OF EASTER DAY. BY A. M. W. DOWNING, M.A., F.R.S., D.Sc.	153

	PAGE
ASTRONOMICAL ALLUSIONS IN SACRED BOOKS OF THE EAST. BY MRS. WALTER MAUNDER	181
THE ZOROASTRIAN CONCEPTION OF A FUTURE LIFE. BY THE REV. PROFESSOR J. HOPE MOULTON, M.A., D.LITT.	233
MÂHÂYANA BUDDHISM AND CHRISTIANITY. BY THE REV. W. ST. CLAIR TISDALL, M.A., D.D.	253
WEIGHTS AND MEASURES OF THE HEBREWS. BY THE REV. PROFESSOR ARCHIBALD R. S. KENNEDY, M.A., D.D.	277
THE OLD AND NEW VERSIONS OF THE BABYLONIAN CREATION AND FLOOD STORIES. BY T. G. PINCHES, LL.D., M.R.A.S. ...	301
ANNUAL ADDRESS: THE UNITY OF GENESIS. BY H. EDOUARD NAVILLE, D.C.L., LL.D., PROFESSOR OF EGYPTOLOGY AT THE UNIVERSITY OF GENEVA	329
RULES AS TO THE AWARDED OF THE GUNNING PRIZE OF 1915 ...	363
LIST OF OFFICERS, MEMBERS, ASSOCIATES, ETC.	365

* * * *The object of the Institute being to investigate, it must not be held to endorse the various views expressed, either in the Papers or in the Discussions.*

VICTORIA INSTITUTE.

REPORT OF THE COUNCIL FOR THE YEAR 1914.

READ AT THE ANNUAL GENERAL MEETING, FEBRUARY 15TH, 1915.

1. *Progress of the Institute.*

The Council, in presenting to the Members the Forty-sixth Annual Report, have pleasure in drawing attention to the increased attendances at the Meetings held during the year. Indeed this was so markedly the case that six of the Meetings were held in the large Hall of the Society of Arts, and even there the crowding was sometimes inconvenient. This crowding was very marked in the five Meetings held in the rooms of the Institute.

2. *Removal to New Premises.*

The Council therefore felt that it was a matter of some urgency to make more suitable arrangements, and after considerable search found an office vacant in 1, Central Buildings, Westminster, where Halls of any required capacity for the Meetings could be hired as needed in the same building. The Office, though smaller than that recently rented in Adelphi Terrace House, is large enough for Council Meetings and for the ordinary purposes of Office and Library; and the position is central, easy of access, and well known. The lease of the rooms in Adelphi Terrace House was not due to expire until Midsummer 1915, but after some negotiation a new tenant was found to whom a fresh lease was accorded by the owners, and the removal of the Institute to its new premises was effected on September 1st. The Council express the hope that this change will be acceptable to all the Members and Associates, and that it may tend to the increased usefulness and prosperity of the Institute.

3. *Meetings.*

Twelve meetings were held during the year 1914. The papers read were the following :—

- “Japan, and some of its Problems, Religious and Social.” By the Rev. Prebendary H. E. Fox, M.A.
- “The Christian Doctrine of Atonement.” By the Rev. H. J. R. MARSTON, M.A.
- “Is the so-called ‘Priestly Code’ of Post-exilic date?” By the Rev. CHANCELLOR LIAS, M.A.
- “The Character of the Bible inferred from its Versions.” By the Rev. T. H. DARLOW, M.A.
- “The Number of the Stars.” By SYDNEY CHAPMAN, Esq., B.A., D.Sc., Chief Assistant at the Royal Observatory, Greenwich. (*Illustrated by Lantern Slides.*)
- “The First Chapter of Genesis.” By E. WALTER MAUNDER, Esq., F.R.A.S.
- “The Latest Discoveries in Babylonia.” By THEO. G. PINCHES, Esq., LL.D., M.R.A.S.
- “Frederic Godet, Tutor of Frederick the Noble.” By Prof. F. F. ROGET.
- “The Composite of Races and Religions in America.” By the Rev. S. B. McCORMICK, D.D., Chancellor of Pittsburg University, U.S.A.
- “The Supremacy of Christianity.” By the Rt. Rev. Bishop J. E. C. WELLDON, M.A., D.D., Dean of Manchester.
- The Annual Address was delivered by Colonel Sir CHARLES M. WATSON, K.C.M.G., C.B., on “Jerusalem, Past and Present,” and was illustrated by about 50 photographs exhibited by the lantern.
- “The Principles of World Empire.” By E. WALTER MAUNDER, Esq., F.R.A.S.

4. *The Journal of Transactions.*

Volume XLVI of the Transactions contains exactly the same number of pages as Volume XLV. The Index to the first 43 volumes is again bound up with it, and the contents of the three subsequent volumes are added at the end. It is intended to publish, in a later volume, a new edition of the Index, brought up to date.

5. *Council and Officers.*

The following is the list of the Council and Officers for the year 1914:—

President.

The Right Honourable The Earl of Halsbury, M.A., D.C.L., F.R.S.

Vice-Presidents.

Sir T. Fowell Buxton, Bart., K.C.M.G.
 David Howard, Esq., D.L., F.C.S. (*Trustee*).
 Lieut.-Gen. Sir H. L. Geary, R.A., K.C.B.
 Professor Edward Hull, M.A., LL.D., F.R.S., F.G.S.
 Rev. Canon R. B. Girdlestone, M.A.
 General Halliday.
 Very Rev. H. Wace, D.D., *Dean of Canterbury (Trustee)*.

Honorary Correspondents.

Professor Sir Gaston Maspero, D.C.L. (*Paris*). Professor Warren Upham, D.Sc.
 Professor E. Naville, Ph.D. (*Geneva*). His Excellency Herr Fridtjof Nansen, D.Sc.
 Professor A. H. Sayce, D.D., LL.D.

Honorary Auditors.

E. J. Sewell, Esq. | H. Lance Gray, Esq.

Honorary Treasurer.

Arthur W. Sutton, Esq., J.P., F.L.S.

Secretary and Editor of the Journal.

E. Walter Maunder, Esq., F.R.A.S.

Council.

(*In Order of Original Election.*)

Rev. Chancellor J. J. Lias, M.A.	William J. Horner, Esq.
Theo. G. Pinches, Esq., LL.D., M.R.A.S.	A. T. Schofield, Esq., M.D.
Ven. Archdeacon W. M. Sinclair, M.A., D.D.	Heywood Smith, Esq., M.A., M.D.
Rev. John Tuckwell, M.R.A.S.	Rev. H. J. R. Marston, M.A.
Lieut.-Colonel G. Mackinlay (<i>Chairman</i>).	Ven. Archdeacon Beresford Potter, M.A.
Arthur W. Sutton, Esq., J.P., F.L.S.	J. W. Thirtle, Esq., LL.D., M.R.A.S.
Rev. Prebendary H. E. Fox, M.A.	E. J. Sewell, Esq.
Professor H. Langhorne Orchard, M.A., B.Sc.	Lt.-Col. M. A. Alves, R.E.
Rt. Rev. Bishop J. E. Welldon, M.A., D.D.	Alfred William Oke, Esq., B.A., LL.M.
Sydney T. Klein, Esq., F.L.S., F.R.A.S., M.R.I.	

Elected during the Year.

Rev. Professor D. S. Margoliouth, D.Litt. | Joseph Graham, Esq.
 R. W. Midin, Esq., F.R.G.S.

6. *Election of Council and Officers.*

In accordance with the rules the following members of the Council retire by rotation, but offer themselves, and are nominated by the Council, for re-election :—

Rev. Prebendary H. E. Fox, M.A.
 Rev. H. J. R. Marston, M.A.
 Ven. Archdeacon Beresford Potter, M.A.
 J. W. Thirtle, Esq., LL.D., M.R.A.S.
 Rev. Chancellor J. J. Lias, M.A.
 T. G. Pinches, Esq., LL.D., M.R.A.S.

The Council nominate also the Rev. G. Harold Lancaster, M.A., F.R.A.S., for election on the Council.

7. *Obituary.*

The Council regret to announce the deaths of the Rt. Hon. Lord Strathcona and Mount Royal, G.C.M.G., LL.D., *Vice-President*; Sir David Gill, K.C.B., LL.D., F.R.S., *Hon. Correspondent*, and of the following Members and Associates :—

W. Dillworth Howard, Esq., Theodore Howard, Esq., the Rev. Prebendary Shelford, M.A., W. H. Seagram, Esq., the Rev. F. W. Tremlett, D.D., the Rev. J. Magens Mello, M.A., and G. A. Gutch, Esq.

Also, since the publication of Vol. XLVI :—

The Rev. John Urquhart, Gunning Prize Essayist, 1905.

8. *New Members and Associates.*

The following are the names of new Members and Associates elected up to the end of the year 1914 :—

MEMBERS.—W. H. Baxter, Esq., J.P., David A. F. Wetherfield, Esq., H. C. Hogan, Esq., Dr. J. J. Acworth, F.C.S., Arthur S. Chamberlain, Esq., B.Sc.

ASSOCIATES.—John Sterry, Esq., the Rev. J. Gosset-Tanner, M.A., S. Bramley-Moore, Esq., A. M. Newbegin, Esq., F.R.A.S., George Avenell, Esq., Miss Norah Ure Mackinlay, Dr. F. Layton Orr, the Rev. Prof. D. S. Margoliouth, D.Litt., Martin H. F. Sutton, Esq., F.L.S., Charles B. Wigg, Esq., Alfred Haigh, Esq., John Wood, Esq., F. C. Danson, Esq., F.S.A., Archibald Greenlees, Esq., the Rev. A. J. Nast, D.D., the Rev. A. L. Breslich, Ph.D., Smetham Lee, Esq., Mrs. H. Wynne, Lt.-Colonel Henry Smith, M.D., M.Ch., Mrs. Hester Smith, M.D., B.Ch., Colonel A. F. Laughton, C.B., Thomas Fitzgerald, Esq., Miss Ethel D. James, B.A., William H. Ash, Esq., J.P., the Rev. W. Ewart Glanville, Ph.D., LL.B., John C. Dick, Esq., M.A., Harold W. Browne, Esq.

9. *Numbers of Members and Associates.*

The following statement shows the number of supporters of the Institute at the end of December, 1914:—

Life Members	...	...	...	27
Annual Members	...	...	...	97
Life Associates	...	...	...	66
Annual Associates	...	...	...	294
Missionary Associates	...	...	...	20
Hon. Corresponding Members	...	...	...	91
Library Associates	...	...	...	24
Total				<hr/> 619 <hr/>

showing a net decrease, after allowing for deaths and retirements, of 8 on last year's return.

10. *Finance.*

The year 1914 has been a difficult one for the Institute from a financial point of view. The heavy expenses connected with the removal of the Offices had to be met this year instead of being postponed to the next, and the outbreak of the War has caused a distinct diminution in the expected income, since several supporters have found themselves unable to continue their subscriptions. It is a matter for thankfulness that the loss from this cause has not been greater.

The total expenditure incurred in 1914 exceeded that in 1913 by £61 8s. 0d.; but the removal expenses, direct and indirect, amounting in all to £57 16s. 9d., are peculiar to this year. These would have involved a heavy deficit had it not been for the donations received during the year for the Special Fund, and even with this help, the unpaid bills carried forward to 1915 amount to £36 8s. 0d. more than those brought forward from 1913. On the other hand, the removal expenses have already been discharged which otherwise would have had to be encountered at Midsummer, 1915, and there is every reason to anticipate that the expenses for rent of Offices and Meeting Room will be considerably lower in the future than they have been in the past. But, as the adverse influence of the War is certain to make itself felt in the near future, it is incumbent upon all supporters of the Institute to endeavour to strengthen it by enlisting fresh subscribers.

11. *Special Fund.*

It was mentioned in the last Annual Report that a Special Fund had been inaugurated by the Council at their Meeting on December 9th, 1913, with the purpose of placing the finances of the Institute upon a more satisfactory basis, and of making provision for larger audiences than could then be suitably accommodated in its rooms. A prompt response was made to this Appeal, and the amount received up to December 31st, 1913, was £52 16s. 3d. During the past year further subscriptions, amounting in all to £43 12s. 0d., have been received, making a total of £96 8s. 3d. The subscriptions received during the past year are given in detail below:—

Lt.-Colonel M. A. Alves, £2 ; Miss E. M. Baumer, 10s. ; the Rev. C. H. Barlow, 5s. ; Colonel A. W. C. Bell, 10s. ; E. A. Bowles, Esq., £1 1s. ; Colonel W. W. Baker, £1 ; Mrs. Barbour, 10s. ; Rev. H. A. Crosbie, 10s. ; H. J. H. de Vismes, Esq., 5s. ; the Rev. Prebendary Fox, £5 ; Archibald Greenlees, Esq., £1 1s. ; General J. G. Halliday, £5 ; Mrs. C. S. Hogg, £1 1s. ; Prof. E. Hull, LL.D., 10s. ; Colonel Sir Swinton Jacob, £2 ; Miss M. A. Laurence, £1 ; Miss Longdon, 10s. ; Williamson Lamplough, Esq., £2 2s. ; Colonel G. Mackinlay, £1 1s. ; Captain M. McNeile, R.N., £1 1s. ; John H. Nelson, Esq., £5 ; Miss S. M. Nugent, 10s. 6d. ; O. T. Olsen, Esq., Ph.D., D.Sc., £1 1s. ; Dr. W. H. Plaister, £1 1s. ; E. Walter Perkins, Esq., 7s. ; Dr. T. G. Pinches, £1 1s. ; Henry P. Rudd, Esq., £2 ; Henry Sandford, Esq., 10s. 6d. ; E. J. Sewell, Esq., £1 1s. ; Captain Hon. H. N. Shore, £1 ; J. P. Stilwell, Esq., J.P., £1 1s. ; W. Duncan White, Esq., £1 1s. ; Henry Wilson, Esq., £1 1s.

While gratefully acknowledging the generosity of those who have thus contributed to the Special Fund, the Council regret that the total amount received is only one-third of that for which they had ventured to ask. It has sufficed indeed to meet the expenses connected with the removal, and of the hire of special rooms for many of the Meetings during the past year, but it does not provide the means for placing the capital account of the Institute in the position which it held a few years ago. The Council hope, therefore, that the friends of the Institute will not relax their efforts, nor consider the subscription list closed ; but that the Special Fund will continue to receive support. They would also invite those Associates who can afford to do so to become full Members, that the losses which it is to be feared will follow upon the War may be made good, and an assured prospect provided that in future the ordinary income will prove sufficient to meet the ordinary expenditure.

12. *Auditors.*

The Council desire again most cordially to thank Messrs. Sewell and Lance Gray for their kind services as Auditors.

13. *Conclusion.*

In passing in review the year 1914, the Great War inevitably dominates our thoughts. The Victoria Institute, from its inception, has endeavoured to bear witness against the evil influence of Materialism, but the events of the last few months have impressed the truth, even upon the most thoughtless, that the principles of Materialism sap the very foundations of all ethics. There was a time not long ago when it was widely claimed, and too freely conceded, that morality was inherent in Materialism, and a high standard of ethics, really adopted without acknowledgment from Christianity, was asserted to be its natural fruit. The demonstration that this is not so has now been placed before the eyes of the whole world. A great nation, great in science, in philosophy and music, and in former times in religion also, has apparently given itself up to the worship of material success. For fifty years it has prepared itself to bring by force or by guile the whole world under its rule. Leaders of its thought have laid it down that military advantage justifies any action, no matter how treacherous or cruel, no matter how contrary to the law of God. Science is good, but the science in which that nation has most excelled is the science of destruction, the destruction of the works of men, the destruction of their lives. Philosophy is good, but not the philosophy which destroys the distinction between right and wrong, truth and falsehood.

The Council would humbly express their hope that God has enabled the Victoria Institute in the past to combat materialistic tendencies, whether arising in this land or in others, and to bear some witness to their faith in the uprightness of the Law of God, the greatness of His Truth, and the reality of His Presence with men.

Signed on behalf of the Council,

HALSBURY.

CASH STATEMENT for the year ending December 31st, 1914.

RECEIPTS.

Cash Balance from 1913 ..	£	s.	d.	£	s.	d.
Subscriptions :—1 Life Member	21	0	0	14	12	1
1 Member	2	2	0			
82 " 1913 ..	172	4	0			
3 " 1914 ..	6	6	0			
1 Associate 1915 ..	1	1	0			
3 Associates 1911 ..	3	3	0			
14 " 1912 ..	14	14	0			
275 " 1913 ..	288	15	0			
9 " 1914 ..	9	9	0			
" 1915 ..						
Sales ..				518	14	0
Dividends ..				63	1	0
Donations ..				11	14	10
				43	12	0

£651 13 11

There is a Capital sum of £500 2½ per cent. Consols, also the Capital of the Gunning Trust Fund, £508 Great India Peninsular Railway Stock. There are unpaid bills carried forward amounting to £185 5s. 9d.

GUNNING PRIZE FUND.

Balance from 1913 ..	£	s.	d.	£	s.	d.
Jan. 2nd, 1914, Dividend..				43	12	5
July 1st, 1914 " ..				7	3	6
				11	17	11
				<u>£62 13 10</u>		

We have verified all the accounts and compared them with the books and vouchers and found them correct.

E. J. SEWELL
H. LANCE GRAY }
Auditors.

January 26th, 1915.

EXPENDITURE.

Printing Stationery	of these £148 17s. 9d. were the unpaid bills of 1913	£	s.	d.
Binding		119	12	6
Stationery		26	8	9
Salaries		16	1	9
Rent		228	0	4
Postage		102	0	7
Expenses of Meetings		41	13	9
Life Assurance		21	11	2
Gas and Electric Light		3	1	9
Library		5	18	5
Re-decoration of Former Offices		9	18	10
Expenses of Removal		26	0	0
Fitting up New Offices		23	6	9
Fire Insurance		8	10	0
Bank Charges		0	12	0
Sundries		0	10	2
Cash at Bank £40 0s. 2d., less cheque not yet presented £25 0s. 0d.		3	7	0
		15	0	2

£651 13 11

THE ANNUAL GENERAL MEETING
OF THE
VICTORIA INSTITUTE

WAS HELD IN COMMITTEE ROOM, B, THE CENTRAL HALL,
WESTMINSTER, ON MONDAY, FEBRUARY 15TH, 1915,
AT 4 O'CLOCK.

DAVID HOWARD, Esq., D.L., F.C.S., Vice-President, took the Chair.

The Minutes of the Last Annual General Meeting, held on February 2nd, 1914, were read and confirmed.

The SECRETARY read the Notice calling the Meeting, and the Report and Statement of Accounts, presented by the Council, having been circulated among the Members present, were taken as read.

Mr. GRAHAM moved, and Prof. HULL seconded,

“That the Report and Statement of Accounts for the year 1914 presented by the Council be received and adopted, and that the thanks of the Meeting be given to the Council, Officers and Auditors, for their efficient conduct of the business of the Institute during the past year.”

The Resolution was carried unanimously.

Mr. HORNER moved, and Col. ALVES seconded—

“That the Council and Officers named in the Report be elected.”

The Resolution was carried unanimously.

Col. MACKINLAY proposed and the TREASURER seconded—

“That the cordial thanks of this Meeting be passed to the Vice-President, Mr. Howard, for presiding on this occasion.”

Prof. HULL spoke in warm support of the Resolution, and recalled that many years ago their Vice-President had proposed him, Prof. HULL, as Secretary of the Institute. The Resolution was carried unanimously.

The CHAIRMAN, in returning thanks to this Resolution, said that the need for the work of the Victoria Institute was as great now as it ever had been. In the fifty years, now nearly completed, of the life of the Institute, they had seen many changes: changes in science, in politics, in philosophy; but Truth had not changed, though men's opinions changed continually. It was for them to remember that "Truth is great and will prevail." That being so they should not be in a hurry, but should be willing to wait patiently for it to declare itself. They ought not to be too sure that they had cleared up every difficulty. There was great teaching in that word of St. Paul, that "now we see, as in a glass,"—that is to say a mirror,—"darkly." Plato had said that the thoughts and the feelings of men were like the shadows thrown into a cave from the objects outside. He well remembered when the one scientific theory which seemed immutable, not to be changed or shaken, was the atomic theory; but now they had got far beyond that. The atoms were now considered to be highly complex structures: they were built up of electrons. Now the War had come and given them other things to think about than scientific theories or abstract philosophies, but here also, he would press upon them the same goal: "Let us patiently seek after Truth."

560TH ORDINARY GENERAL MEETING.

HELD IN THE CONFERENCE HALL, 1, CENTRAL BUILDINGS,
WESTMINSTER, ON MONDAY, DECEMBER 14TH, 1914,
AT 4.30 P.M.

THE RIGHT HON. THE EARL OF HALSBURY, F.R.S., PRESIDENT
OF THE INSTITUTE, OCCUPIED THE CHAIR.

The Minutes of the preceding Meeting were read and signed and the SECRETARY announced that MRS. WYNNE, Lt.-Col. HENRY SMITH, M.D., M.Ch., MRS. HESTER SMITH, M.D., B.Ch., Col. A. F. LAUGHTON, C.B., THOS. FITZGERALD, Esq., Miss ETHEL JAMES, B.A., W. H. ASH, Esq., J.P., Rev. W. E. GLANVILLE, Ph.D., LL.B., JOHN C. DICK, Esq., M.A., and HAROLD W. BROWNE, Esq., had been elected Associates of the Institute.

THE PRESIDENT welcomed the Victoria Institute to its new premises. He congratulated the members in that they no longer had to climb up two flights of stairs to their Meeting-room. He knew from his own experience that the Council and Officers had taken a great deal of trouble in their selection of their new quarters, and he thought that all present would feel that their efforts had been most successful ; the more so that they had secured this more comfortable home for a somewhat smaller sum than they had been paying previously. The PRESIDENT then called upon the Secretary, Mr. E. Walter Maunder, to read his paper on "The Principles of World Empire."

THE PRINCIPLES OF WORLD-EMPIRE. By E.
WALTER MAUNDER, F.R.A.S.

THREE years ago, the Victoria Institute enjoyed the high privilege of listening to the Annual Address, delivered by Sir Charles Bruce, on "The True Temper of Empire." Empire he defined as "An aggregate of administrative units, of diverse constituent elements, professing allegiance to a central sovereign authority"; and adopting from him this definition, I wish to enquire into a special case of Empire ; that of Empire co-extensive with human population ; empire over the entire world ; universal Empire.

The phrase "the true temper of Empire" is due to Bacon, who considered that it "is exhibited in the state of things which exists when the two contraries, sovereignty and liberty, are

mingled in fit proportions." In his Address, Sir Charles was necessarily most concerned with the "*mingling*"; with the practical question how best to preserve their "fit proportions." My purpose is rather to examine into the basic principles themselves; to deal with "sovereignty and liberty" in their application to the problem of Empire, not confined to some particular "aggregate of administrative units," but extending over the entire world.

The struggle in which to-day we have found ourselves involved is one for World-Empire. Since we are in the struggle, it follows inevitably that the details of the struggle occupy our thoughts to the exclusion of almost every other consideration. Yet the struggle is one of principles, more than of armies, and will eventually be decided by principles, not by artillery. It may, therefore, well repay us if for a few minutes we try to remove ourselves far from the actual material conflict, and examine the principles.

THE GREAT RIVER VALLEY STATES.

World-Empire, sovereignty extending over the whole known habitable world, is an ancient ideal.

The earliest great states of the ancient world arose in approximately the same period and in analogous geographical conditions. They were the states of the great river valleys. Egypt was "the gift of the Nile"; Mesopotamia of the twin rivers, the Tigris and the Euphrates; China of the Hoang-Ho. In these regions, blessed with plentiful sunshine and a warm climate, abundance of water, but little rain, life was easy of support and the cereals could be cultivated with great success. Egypt is, of course, the typical instance of a river-valley state, but all three countries resembled each other in this, that their suitability for the maintenance of a great population depended upon the river being brought under subjection. It was necessary to embank it and to arrange for reservoirs of its surplus waters, which had to be distributed over the land by irrigation canals. Until the river had been thus controlled, it was a hindrance rather than an aid to human settlement; its annual inundations rendered the land impassable for months together, and swept away any frail habitations that the hand of man might have reared.

The conquest of the river was thus, in each case, a prime necessity, and this could only be accomplished by concerted human effort on a very large scale. Here then, therefore, the first great states arose. With the embankment of the river and

the control and distribution of its waters, Egypt, Mesopotamia, and China became countries of enormous productiveness; Egypt in particular supported not only an immense resident population, but had food enough to spare for barter with its neighbours.

These river valleys became the sites of the chief primitive states. The government was simple and necessarily despotic, for otherwise the great engineering works upon which they depended could not have been carried out. These states were populous, because food was abundant; they were wealthy, because the type of food which they produced was capable of storage, so that the abundant harvest of one year could be laid up for the future and drawn upon at pleasure. Further, in general the supply of food exceeded the requirements of the country itself. "The economy of ancient Egypt may be summed up in two words: forced-labour and subsistence-wages."*

The type of population composing such a state must necessarily be submissive, patient, industrious, and therefore neither warlike nor aggressive, but on the borders of Egypt and much more on those of Mesopotamia, there were races of a very different type: desert wanderers, moving rapidly from place to place; mountaineers, living by raids upon their richer neighbours. Such tribes were accustomed to war and danger, and loved change and excitement rather than monotonous industry, and to them the dwellers in the river valley appeared to invite attack. So from one quarter or another, the river civilizations, and especially those of the country of the Euphrates and Tigris, were continually exposed to invasion, and frequently passed into the hands of new lords. The tide of war was ever ebbing and flowing over it, and the periodic inundations of the rivers became, as it were, types of the succession of its political changes.

The defence of the river states must therefore have early become an urgent problem for their rulers, whether those rulers were natives or foreign conquerors, and it was found necessary to establish a regular army in order to keep raiders at a distance. The best defence was seen to lie in the counter attack, and in the subjugation of the regions from which the invaders came. Here, then, in essence, we find the explanation of the first effort to establish world-empire—an authority which should extend over the whole of the inhabited earth as it was then known.

There was something not quite ignoble or unreasonable in these efforts to bring the whole world under a single authority.

* Simcox, *Primitive Civilizations*, vol. i, p. 67.

No doubt, baser motives were at work with the first would-be conquerors, such as ambition, greed, the love of power and display, and, above all, the intense excitement of successful warfare. But, beyond these, there was the prompting of what appeared to be political necessity; the civilization of the river valley had to be protected from the ruder tribes without. And world-empire, could it be established, seemed to offer three great boons. First, peace, by the subjugation of all possible invaders; next, plenty, by the more complete organization of agriculture; and, thirdly, the accomplishment of great public works, such as embankments, canals, and the building of cities, towers and temples, or, as in Egypt, of tombs like the pyramids, which, if of little usefulness, were supremely impressive.

We know that this idea of world conquest did present itself to rulers in the valley of the twin rivers, for we find that they often assumed to themselves the title of "kings of the four regions of the world," or, more simply, "kings of the world." Nor was this title in all cases merely a piece of grandiloquence. Some 5,000 years ago, Sargon of Agadé, and his successor, Naram Sin, actually achieved this conquest, and pushed their victories to the five seas—the Caspian, the Euxine, the Mediterranean, the Red Sea, and the Persian Gulf. Sargon even claims to have crossed the sea, and established his dominion beyond it. And in the eighth century B.C.—that is to say, roughly half-way from the time of the first Sargon to our own day—a second conqueror, who assumed to himself the same name, Sargon, repeated his conquest, and pushed the arms of Assyria almost to the same limits. Under Sargon of Assyria and his son, Sennacherib, Assyria became an armed camp; the nation was drained into the army; the kingdom lived only for war. The monuments of this time are concerned solely with the military life: the army on the march, the army in battle, the army besieging the cities, the army slaying or torturing captives, the army laying waste an enemy's country. We have not yet discovered and deciphered all the tablets and inscriptions that relate to this period, and we may yet learn how the heart of Sennacherib bled when he learnt of the destruction of some Kirjath-Sepher ("book-city") and the library for which it was famed. But the principle of "frightfulness" was well understood by the Assyrian kings, and wholesale massacres, mutilations, outrages and tortures, freely chronicled by the Assyrian kings themselves, might almost pass for a description of devastated Belgium in the autumn of the year of grace 1914.

But the world-empire of Sargon and Sennacherib passed quickly, and for two causes, both inseparable from their methods. First, Assyria was drained of its manhood to fill the ranks of the army. Next, the policy of "frightfulness" filled the surrounding nations with such a deep hatred against Assyria that they all combined against her. Of the Assyrian armies it had been true

"A fire devoureth before them ;
And behind them a flame burneth ;
The land is as the Garden of Eden before them,
And behind them a desolate wilderness ;
Yea, and nothing shall escape them."

But the day came when judgment was poured out upon the city of blood, and Nineveh was laid waste : so utterly waste, that in comparatively few years its very site had been forgotten.

"The thing that hath been, it is that which shall be ;
And that which is done is that which shall be done ;
And there is no new thing under the sun."

The house of Sargon, the city of Nineveh, and the Assyrian nation perished.

World-empire fell to another king, to another nation, and became centred in another city. Nebuchadnezzar, King of Babylon, succeeded to the power and to much of the dominions of Sargon. He and his kingdom passed away in turn, but still the Empire remained : first under the rule of the Medes, then under Cyrus and his Persians ; and it was yet further extended under Darius, the son of Hystaspes. Then, a century and a half later, the Empire was wrested from the feeble hands of a later Darius by Alexander the Macedonian. Thus the World-Empire which had once been Assyrian, and had become in succession Babylonian, Median, Persian, became nominally Greek.

There is a legend of the temple raised to Diana in the grove of Aricia that the priest who served in it and who reigned as king over its sanctuary, won his right to that twofold office by the murder of his predecessor ; and he himself kept it only till he fell under the dagger of the murderer who should succeed him. So these old-world conquerors succeeded each other by the claim that consecrated "the ghastly priest" of the Arician grove :—

"The priest that slew the slayer,
And must himself be slain."

And such, sooner or later, must be the fate of any attempt to found world-empire by the power of the sword. "All they that take the sword shall perish with the sword."

THE SMALL SEABOARD STATES.

The great river valley communities of the ancient world do not afford the only type of the civilization of that time. There was another type, strongly contrasted with them in almost every particular.

“The mountains look on Marathon,
And Marathon looks on the sea.”

All along the indented coast of Asia Minor, on the islands of the *Ægean*, in the creeks and harbours of Greece, cities had sprung up, each more or less isolated. All were on the seaboard, and on the landward side were generally closed in by mountains, so that the geography of the region led inevitably to the formation of little states, each complete in its isolation. One thing linked them together; it was indeed the sea which divided them, but the sea also united.

To these little maritime communities commerce was a necessity. The small land area commanded by each could not produce all that was needed, so that intercourse and exchange with other states were vital to them. Their populations, therefore, were obliged to be adventurous and resourceful. The sailor is the typical “handyman,” and must always be on the alert. Further, in the community of ship life the personality of every man counts, and tends to become accentuated. Every ship, too, is a community complete in itself; sea life, therefore, was a training in the recognition of the corporate character of the home city, and the devotion to the welfare of that home city was increased with every return to it.

The river valley empire and the secluded seaport city were therefore the very antitheses, the one of the other. The first was a despotism, at the absolute disposal of a single man; the second tended to become a republic, governed in accordance with the wishes of the majority of its citizens. The two civilizations therefore stood for the two principles which Bacon has named “sovereignty” and “liberty.” The principles were there embodied, there took concrete form.

Here is the interest which attaches to Marathon, and has made it famous through four and twenty centuries; for it was at Marathon that the first “decisive battle of the world” recorded in authentic history took place. Two world principles strove there.

Darius Hystaspis, the Napoleon of his day, both in military genius and able administration, had conquered practically the whole world known to him, except the little country of Greece;

and his conquests included the Greek cities on the coast of Asia Minor. Athens, which was closely connected with these Ionian cities by the ties of race, had just expelled its tyrant, Hippias, who sought the assistance of Darius. This would, no doubt, have been readily given in any case, but, as the Athenians helped in a revolt of the Ionian cities, Darius became greatly incensed against them, and determined upon their conquest. He despatched a powerful expedition which landed on the east coast of Attica, on a barren plain some twenty-five miles from Athens, and a revolution was also planned within the city itself. The Athenians marched out to the attack, and, though much outnumbered, fell upon the Persians with such swiftness and vigour that they drove them back to their ships with great slaughter, and succeeded in taking or destroying seven of the vessels. The rising in the city found no opportunity, and the Persian generals, feeling that their expedition had failed, returned home with the remnant of their forces.

The Battle of Marathon was only the first stage in the war between Persia and Greece; it was renewed again ten years later by the mighty expedition under Xerxes. But Marathon for the time was decisive, for if the Persian had succeeded there, the subjugation of the rest of Greece could hardly have been avoided, and, so far as we can see, the greater part of what we now owe to Greek intellect and achievement would have been lost to later ages.

Just as Athens did not hesitate to stand alone against the Persian invasion at Marathon, so she again bore the brunt of the attack in the greater war ten years later. Attica was overrun by the Persians, the Athenians went into exile and abandoned their city, which was burnt; of all the Greek states, they alone rose to this height of self-abnegation.

The spirit of liberty is not of itself a civic virtue. The unwillingness to accept authority, to obey orders, to restrain one's own self-will, is no virtue at all, but the reverse.

“He don't obey no orders except they be his own”

does not describe a man of high character, but a man without character, and it was when Israel had reached the lowest depths of national disintegration that it was written, “Every man did that which was right in his own eyes.” But self-sacrifice, self-sacrifice to the uttermost for the sake of the liberty of others, this is the foundation-stone of all civic virtue, and the proud distinction of Athens was this—that she first recognized

that Greek liberty was worth sacrificing existence for, even her own existence as a city and state.

The fact that Athens stood alone in her appreciation of the meaning of the struggle, and in her readiness to sacrifice everything shows that, had she been overcome, there was no moral force elsewhere in Greece sufficient to have carried on the struggle. Greece would have ceased to be.

THE VALUE OF SMALL STATES.

And what would the world have lost ?

We should have lost the results of that free play of human individuality and genius which grew out of the freedom of Athens, and of the other cities of Greece. In drama, Athens gave us Aeschylus, Sophocles, Euripides; in history, Thucydides; in philosophy, Plato. In Athens the fine arts, and especially sculpture, reached their highest development. In Athens was trained Aristotle, the father of the sciences. Not all the empires of Assyria, Babylon, Media, Persia, Macedon have contributed so much to intellectual progress as this one little Greek state, not so large as the county of Surrey.

We have been told of late by Treitzschke, the historian-prophet of Germany, that the small state, by reason of its smallness, must necessarily be petty, confined, unambitious in its thoughts and life. Great events, enacted upon a broad stage, are necessary, in his belief, to raise men's thoughts and actions to the heroic scale. The instance of Athens, if it stood alone, would be sufficient to refute the argument. But Athens, though the most brilliant, was but the exemplar of many Greek city states, and the phenomenon of Athens was closely reproduced 1,500 years later in the achievements of Florence and other great Italian cities. All these shone in the very particulars of heroic and martial patriotism, of civic pride and political sagacity, which Treitzschke would claim as the monopoly of vast empires. The same virtues were also shown in pre-eminent degree by the free cities of the Netherlands, and another little state, one of the smallest of all, the inland city of Geneva, has had an influence on religious and political thought that has been world wide.

The principle of sovereignty has again and again sought to establish itself in world power, and it has as often failed, and failed because the military strength upon which it had relied to establish and maintain its dominance, has ebbed away, and because of the righteous hatred which its tyranny has always evoked.

Can world-empire then be based on liberty? Is it possible that an Athenian empire would fare better than a Persian? The case was put to the test, for just as Athens is the typical instance of a free state successfully resisting the principle of empire, so Athens in turn became the typical instance of the failure of a free state to establish empire.

The failure of Athens was most significant. The numerous little Greek city states had much in common. They recognized their kinship in blood, they spoke the same language, they had the same religion, they shared in the same public celebrations, their civilizations were of the same type, they followed the same intellectual ideals. Yet it proved impossible to weld them together into a political unity; each city clung to its right to differ from the others; each proved in the outcome as jealous of Greek encroachment upon its individuality as of barbarian aggression. And the bitterness of Greek towards Greek was often deadly. Two great political crimes disfigure the history of this period, and illustrate the incompetence of the Greek to construct empire, even within the limits of the Greek-speaking world itself—the destruction of Plataea by the Thebans, and the failure on the part of Athens to support Olynthus until it was too late to save it.

IS "EMPIRE" DESIRABLE?

But if it be the case that small states are of such high importance to humanity, and if the attempt to establish Empire on an individualistic basis has failed as conspicuously as the attempt to found it on armed compulsion, does not the question arise, "Is Empire itself desirable?"

But whether we like it or not, the fact is that human history flows in that direction. We have seen that Greece affords numerous examples of the small city state. It was indeed a fundamental principle to Aristotle that a city too large for its citizens to hear the voice of a single town-crier had passed the limits of wholesome growth. But in the later Middle Ages, when this idea of the free city state was producing some of its most splendid examples, another force was again making itself felt—the idea of nationhood, as something higher, fuller, nobler than cityhood. Community of race, of religion, of language, were each felt to be reasons for striving for unity of government and law. So, through the long centuries, England, France, Spain, Italy, Germany have struggled, hoped and worked for this ideal. So, to-day, Greece, Roumania, Serbia, Bulgaria,

Poland are in their turn struggling, hoping, working. A striking illustration of the power of this instinct was afforded us six years ago when the Convention of the South African States met together to consider the question of union. I was in South Africa at the time, and it struck me as one of the most significant events of history. For this projected union was not a union of a single race, but of two, speaking different languages, having different traditions; two which had been in armed conflict less than seven years before. The attitudes of Natal and of the Orange River States were particularly interesting; Natal was almost purely British, the Orange River almost purely Boer. Both States were proud of their independence; both States were small, and must necessarily have a subordinate representation in the united government; both at the first blush of the new proposal were opposed to it, but after due deliberation both gave it their adhesion.

But the idea of nationhood suffered expansion in its turn. Some 400 years ago Columbus discovered America, and as a consequence Europe, which had hitherto looked eastward, now faced westward. Commercial supremacy had belonged to the great seaports of the Mediterranean; the merchants of Venice and Genoa had been the great men of the earth. But now the states bordering on the Atlantic: Spain, Portugal, France, England, and Holland, were better placed than Italy for the new adventure, and the Italian seaports declined in importance.

A DIGRESSION.

It is permitted to the cobbler to say, "There is nothing like leather"; and it may be likewise permitted to an astronomer to point out that a not unimportant part in the decision as to which nation should reap the greatest fruits of the new discovery was played by Greenwich Observatory. The navigation of the ocean raised problems of a different order from those involved in the navigation of the Midland Sea; problems which could only be solved practically by a great advance in astronomical science. The Observatory at Greenwich was founded for this purpose. The problem was worked out there, under Maskelyne, the fifth Astronomer Royal. One of the earliest and most skilful masters of the new method of navigation, Capt. James Cook, assisted General Wolfe (whose home lay within a stone's throw of the Observatory) in the operations preceding the taking of Quebec, surveyed the St.

Lawrence and Newfoundland, and later surveyed the east coast of Australia and discovered much of New Zealand, of the islands of the Pacific, and the coast of British Columbia. The superb hydrographic work carried out by Capt. Cook, largely aided by a member of the Greenwich staff, Charles Green, laid the foundation of the complete series of hydrographic charts prepared by the British Admiralty. And because nine out of every ten sea charts were thus British, and took the Greenwich meridian as their basis, the International Conference at Washington, in 1884, adopted Greenwich as the prime meridian of the world, and Greenwich time as the basis upon which to found a world-wide system of standard times.

Spain, Portugal, and the Netherlands were in turn defeated in the struggle for the Empire over seas. France and England contested the prize for a hundred and twenty years, and the final decision was reached at the Battle of Trafalgar. Sea power decided the event, but sea power was not merely a question of armaments and valour: it was to no small degree a question of the skill of the navigator, and the greater experience which our sailors had had in exploration and discovery.

I must apologize for this digression, but I have been moved to it, partly by what I hope is the innocent pride that Greenwich Observatory bore so practical a part in the building of the British Empire, and partly because I must confess to impatience with the slander so often repeated, even by Englishmen, that the British Empire has been built up by robbery. It is not so. The great British Dominions: Canada, Australia, South Africa, New Zealand, have been built by British effort and British brains. True we won Quebec by the sword, but it was in the course of repelling a French invasion, nor was the country taken from its inhabitants. The French were left undisturbed in the enjoyment of their fields, their language and their faith; and to-day, on the one hand, they are masters in their own house, and, on the other, they are most desirous to show their loyalty to the British Crown. West of Quebec we found the country a desolate wilderness, almost without inhabitant; and now it is the granary of the world.

EMPIRE-STATES

But to return. In the years following the discovery of America, both Portugal and Spain acquired large over-seas possessions, of which now Portugal retains little, and Spain almost nothing. Holland also established a colonial Empire which is

still considerable. France, in her great struggle with England, lost almost all her acquisitions beyond the sea, but has since started on a new course of colonial expansions, and now comes high in order among the great Empire-States. Britain wrested India, Canada, and South Africa from France, but lost on the other hand the Colonies she had planted along the Atlantic coast of North America. Of the five nations that entered into competition for Empire beyond the seas, she has been far the most successful. Of Empire-States, now existing, four stand out pre-eminent. First, China, oldest of all: older than history: the embodiment in living form to-day of civilization reaching back to the founding of the primeval states of the river-valleys, China includes within its borders one-fourth of the human race. Another fourth is included in the British Empire, which differs from China in almost every characteristic, but notably in these two: that, instead of being homogeneous and compact, it is most widely scattered, and comprises amongst its peoples the most diverse elements. These two Empire-States thus contain between them half mankind.

The third Empire-State is Russia, with a population of about one-tenth the whole, and the United States of America, with a population of one-sixteenth, comes fourth. Strong indeed must be the forces tending towards aggregation when we find that two-thirds of the whole population of the planet are grouped under four sovereignties, and are satisfied to be so grouped; sovereignties widely different in origin, development and present character.

Two-thirds of mankind are included in these four great Empire-States, and a large proportion of the remaining third is distributed among five or six smaller Empire-States. The only region where, as yet, no strong tendency in this direction has yet been seen, is in South America; yet even here there would be nothing surprising if, within the next few years, this continent should become an Empire-State also;—"an aggregate of administrative units of diverse constituent elements, professing allegiance to a central sovereign authority."

Have any of the four great Empire-States been built upon a great principle, a principle which might, by its working out in the future, transform the Empire-State into World-Empire?

The answer is obvious. These four States are growths; they have not developed by the conscious purpose and design of men. Wars indeed had some influence in their shaping, but in the case of all, the real motive power has been the search for food. China, Russia and Siberia, the United States, Canada, Australia,

South Africa, New Zealand are substantially the result of obedience to the first command of all :—

“Be fruitful and multiply and replenish the earth and subdue it.”

Britain has been differentiated from the three other Empire-States in that, being an island, her expansion has necessarily been across the ocean. She has been a merchant state as well as an agricultural one ; and manufacture and trade are largely the means of her support.

But because these Empires are growths, are in fact living organisms, it follows that they may die ; must die indeed, unless they derive their life from something imperishable. And it is noteworthy that all the four are face to face with problems that threaten their existence.

China, that old, old bottle, has had poured into it the new wine of modern democratic ideas. Russia is in a like case. The United States stand to all appearance as much the most favoured nation, and we all remember with pleasure the bright optimism and charming lucidity of Chancellor McCormick's paper last session on “The Composite of Races and Religions in America.” But we also remember that the most difficult and serious questions that American statesmen have to face were confessedly left out of account ; such as the relation of the coloured races, black and yellow, to the white, and the concentration of wealth and of the means of supply and transport in the hands of a few individuals.

Britain is confronted by problems more numerous and more complex than those with which the United States have to deal. The great Republic established definite organic relations between the Union and the individual States comprising it at the very beginning of its career, and the great question as to where sovereignty was lodged was fought out to a conclusion half a century ago. For Britain the whole question of organic relations between her Dominions and herself, and these again with each other, with the Crown Colonies and with India, has never been so much as stated for solution. “Time and patient neglect” are the two chief factors upon which Britain has most relied in the past, and still relies ; but these will not suffice to conjure away the causes of difference and difficulty which are now making themselves manifest.

And beside the many difficulties attaching to any scheme for federating the self-governing English-speaking Dominions with the Mother Country, the British Empire presents a series of problems arising from differences of colour, race, religion,

civilization and custom to which the experience of the United States can furnish no analogy.

Whatever their drawbacks, it must be admitted that the Empire-States have on the whole been beneficial to their populations. Yet no one of them, in itself, affords the assurance of permanence ; still less is there evidence of such overmastering vitality as would enable one of the four to annex or assimilate the others.

But if none of the four great Empire-States is either desirous or capable of extending its sovereignty over the others, is there any claimant to World-Empire to be found elsewhere ?

A MODERN CLAIMANT FOR WORLD-EMPIRE.

A great nation, which has achieved nationhood within the last half century, is making, not merely a bid for empirehood, but seeks to extend that to an hegemony of the planet, so that in the words of its ruler, "Nothing shall happen anywhere without Germany having its say in it." The method of Germany, or rather Prussia, has been, in time of peace to make the most sedulous and detailed preparation for war, and then suddenly to attack an unprepared opponent. Thus Prussia aggrandized herself under Frederick the Great; thus in our own days it drove Austria out of the Germanic Confederation and secured the hegemony to itself; thus it overthrew France in 1870, and consolidated the German Empire; thus it has been working and preparing for 43 years in order, by the crushing of France, the defeat of Russia, and the conquest of England, to establish itself master of Europe. It was doubtless intended that the three tasks should be undertaken in succession, and but for one unforeseen obstacle, it might have been effected. Even as Athens threw itself in the road of the Persians, so the Belgians closed their country to the Germans, and accepted for the sake of Europe, nay of the world, the desolation of their land and their own exile from it.

What principle has inspired Prussia and Germany to this adventure ? For though Germany is not a free nation, yet that which is seen here is undoubtedly a national movement, and multitudes of men are only moved to unanimous action on this scale by the stirring of a principle.

The principle is not a new one ; it is as old as Cain. Might is Right ; Cain slew Abel and therefore was the better man. In ancient Athens there were those who held the same doctrine :—

"Those who make the laws are the weak and the many : they therefore make laws with a view to themselves and their own interests, and with the same purpose they bestow praise and impute blame ; and to terrify such men as are stronger than themselves and are able to acquire more . . . they say it is base and unjust to obtain a superiority . . . But Nature herself, I think, convinces us on the contrary that it is right that the better man should have more than the worse, and the more powerful than the weaker . . . This it is that is seemly and just according to nature . . . that a man who lives rightly should permit his desires to be as great as possible, and should not restrain them . . . for to those whom it has befallen from the first either to be the sons of kings, or who are able, by nature, to procure for themselves a government, a tyranny or dynasty, what can be more disgraceful and base than temperance ? Who when it is in their power to enjoy the good things of this life, and no one hinders them, impose a master on themselves—the law, discourse and censure of the multitude . . . Luxury, intemperance and liberty . . . these are virtue and happiness, but all those other fine things, those compacts contrary to nature, are extravagances of men, and are of no value."*

Briefly summarized, the position of Callicles in this discussion with Socrates was : "There is no law for the man who is strong enough to break the law. Self-restraint, self-control, not from external compulsion, but from ethical principle, is folly ; indeed a sin against the law of strength." This principle inculcated by Nietzsche as holding for the individual, Germany has applied to herself as a nation amongst nations, and is putting it to the supreme test to-day. Yet after all it is but the test of the "ghastly priest." If Germany should succeed, it will only succeed as a murderer, and sooner or later must suffer murder in its turn.

IMMATERIAL FORCES IN WORLD-EMPIRE.

Empire, enduring Empire, must be based on something less tangible and therefore less transitory than violence. Military courage and skill did indeed contribute to the building of the greatest and most enduring Empire of history, but Rome would never have reached empirehood if it had possessed no higher qualities than these. In its origin, and for long centuries of its history, Rome was only a small self-contained city state, with no advantages of geographical position. Its growth was

* Callicles in the *Gorgias* of Plato, 85–103.

partly due to the law-abiding instinct of its citizens, even during the heat of their fiercest mutual dissensions, and partly to the broadmindedness in their external relations which led them to associate their enemies with themselves in partnership. So Rome expanded into Latium, and Latium into Italy, and the new factors became organically united with Rome. It was the wise toleration that Rome showed for other races, other nations, other customs and ideals, which rendered the Roman Empire possible, and secured it so long a continuance. This toleration which the Germans of to-day would consider treason to the doctrine of "*Germany over all the World*," and a slur upon its military supremacy, Rome, though no other state ever had better right to glory in military pre-eminence, yet found to be the more effective means for the diffusion of the Roman authority, and the cementing of the Roman Empire.

The example of Rome teaches us that, even where military force attains its highest development, the strongest sanction of Empire is to be found, not in material forces, but in immaterial.

We have seen how in early times two types of civilization sprang up—the great agricultural states of the river valleys, the little commercial states of the seaboard cities—and that the one type favoured the development of the principle of sovereignty, and the other of the principle of liberty. We have seen that neither principle succeeded in accomplishing world-empire, yet that there is a tendency in the direction of world-empire is indubitable. The little city-state has gone; the nation-state has arrived, but has already passed in many cases into the empire-state. None of these great empire-states is as yet assured of permanence; certainly none appears qualified for universal rule.

The city-state was opposed to the principle of the nation-state, but the higher principle prevailed, and the city-state had to give way. The nation-state in turn is opposed to the principle of the empire-state, but the higher principle again is prevailing, and the lower appears to be yielding to it. Is there a principle so potent that it shall override that of the empire-state and establish the world-empire?

THE SOVEREIGNTY OF GOD.

Let history answer. Thirteen hundred years ago a great movement arose which made one of the most formidable bids for world-empire that has yet been seen.

We are often told that the Mohammedan religion was propagated by the sword. True undoubtedly ; but the explanation leaves unexplained all that requires explanation. The Arabs had been wielders of the sword, and for that matter successful wielders, since we first hear of their existence ; both Egypt and Babylonia had known them and experienced their prowess.

But it was their religion which gave these desert tribes coherence, which welded them into a nation, and enabled them to incorporate races of widely different origin. So one doctrine, one sense of unity, spread from the Ganges to the Atlas, and from the Altaï to Khartoum.

The doctrine which gave so striking a power of cohesion to such incoherent material was that of the Sovereignty of God. And this doctrine was held as a faith, for a man's faith is not the doctrine that he may chance to profess, but that which he practises. It is a common and a cheap thing to profess belief in God,—as common as conceit, and as cheap as cant,—when the god in which we believe is simply the deification of our own supposed merits, and his chief function is to gratify our vanity and accomplish our desires. Many conquerors, many nations, have professed to believe in God: even Sennacherib could worship in "the house of Nisroch," and Nebuchadnezzar return thanks to Marduk for victories, and so on throughout history. But it is a different thing indeed to recognize the Presence of One infinitely exalted above us, One Who cannot be the creature of our petty whims and self-worship, but before Whom our wills, ambitions and purposes, must learn to abase themselves.

It is a deep and true distinction that Abraham Lincoln made, when an eager supporter asked him, " You do think, Mr. Lincoln, do you not, that God is on our side ? " " That, madam, is not a point about which I am anxious ; what I am anxious about is that we should be on God's side." He apprehended, that is to say, something of the reality of God's rule over all the earth, and of His infinite supremacy ; and longed, not so much for the success of his own schemes, and of his own party, as for the fulfilment of the Will of God. So, too, the religion of Islam impressed upon its faithful adherents something of the same insight, and the Mohammedan not only entreated God for success, and thanked Him for victory, but in loss, in suffering and defeat, he worshipped Him still, and said, " It is the will of Allah." To him the sovereignty of God was a reality ever present, and it had this immense political effect that when an

enemy accepted Islam, he forthwith became an equal and a brother.

“Only God is Great,” and before Him the differences between man and man became as naught. If one man or one nation claims authority over others on the ground of self-asserted superiority it is but natural, nay it may be a bounden duty, to contest that claim and put it to the proof. But when we realize that all power and authority come from God; that He alone is Sovereign; then submission to sovereignty is compatible with dignity and self-respect, for man becomes God’s servant. And dignity and self-respect mark the devout Mohammedan to-day.

“God is Great,” He alone is Sovereign; what is it to Him whether a nation counts its armies by the man or by the million? But that the material accidents and equipments of a nation are not essential to nationhood, history teaches us; the spiritual ideal can be sufficient in itself.

There is a nation, without king or priest, without city or country, without nobles or parliament, without army or navy, without revenue or exchequer. Its ambassadors are not found at the courts of the nations; treaties are not made with it; yet it lives a nation still. And, seeing that it is thus disembodied and yet lives, no Kaiser can send an ultimatum to it, or overrun its land, or burn its cities; he cannot lead its armies into captivity or force the surrender of its fleet.

Yet it is a nation, and of all the nations of the earth is there another so invulnerable? Once Sennacherib sent to it the challenge:—

“Where is the king of Hamath, and the king of Arpad, and the king of the city of Sepharvaim, of Hena and Ivah?”

But to-day we ask, “Where are Nineveh and the Assyrian kings?” and many another nation has gone down to the sides of the pit since then. “There is Elam and all her multitude,” “there is Edom, her kings and all her princes,” but Judah remains, bereft of everything, but living still.

And this it is which has made her immortal: the truth which she learnt two thousand years before Mohammed spoke, “The Lord is King over all the earth,” and though disinherited and dispersed these many centuries, Judah still acknowledges the Holy One of Israel as her King.

DIVINE FREEDOM.

The Sovereignty of God ; Sovereignty is the first principle of Empire, but Liberty is not less a principle ; and Liberty has Divine sanction, for man is made in the image of God, and ought to show the image of Divine Freedom. The Sovereignty of God and the freedom of man received their supreme expression in Christ, and therefore should be shown forth in Christianity.

The Divine Freedom is manifested to men in the freedom with which God bestows His gifts. He is not only the rightful Recipient of all worship, thanks and praise, but the Giver of all gifts, whether for body, mind or spirit. Therefore man, in turn, must show his freedom by that which he gives to God and to his fellow-men. True Liberty manifests itself in sacrifice and service.

Our subject is Empire, not Religion ; therefore the sacrifice and service with which we are here concerned is self-sacrifice on behalf of our fellow-men, and service rendered to them. These are true principles of Empire ; principles that bind men together, and build them in organic unity, and yet leave freest play to individual qualities and powers.

Is it a new thought that liberty and self-sacrifice are co-extensive ? But history shows that it is so. Athens sacrificed herself because she was free, and she was free because she had the spirit of self-sacrifice. And the same holds good to-day : Belgium, like Athens, sacrificed herself because she too was free ; and having thus sacrificed herself, she has secured her liberty ; all the power of Germany cannot enslave her. So with the self-governing Dominions of our Empire ; they are free, and because they are free they have freely put all they possess for the help of the Mother-land. Similarly with our own young men who have offered themselves by the hundred thousand for the war : theirs was the self-sacrifice because theirs was the freedom—to offer or to refrain from offering.

And Liberty is service. The true symbol of Liberty in Empire is not the blood-red Phrygian cap, but the towel girt round the loins for the washing of the feet. No nation has surpassed the British in valour and military skill, but however we obtained dominion over India, it is not by the power of the sword that we retain it to-day ; it is by the power of service :

service in her administration, service in her schools, service in her hospitals, service during her famines and plagues. Despotism, that is to say rule by force, degrades both the master and the slave, and the master more than the slave; rule by service leaves both him who serves and him who is served free, and it exalts both.

Sovereignty and Liberty. God alone is Great; God alone is Sovereign. All authority and sovereignty therefore come from Him, and can only be rightly exercised as stewardships from Him; with a deep sense of responsibility towards Him, and in accordance with His mind and will. The claim of one man—or of one nation—to dominion over others, because of some superiority, real or imagined, in strength or wisdom, or some other personal quality, has no foundation. The differences between man and man are not of the order to warrant it, and authority is not inherent in man, but in God alone.

It is generally admitted to-day that authority is not inherent in some one man, or in some few men; but it is widely assumed that it is necessarily inherent in a great multitude of men. It is true that authority may be exercised by a multitude, but by whomsoever exercised it is inherent only in God, and can only be rightly administered in the spirit of His government; that is to say, for the welfare and freedom of the governed. All legitimate government is for the protection of those under its rule, and especially of those who have no other defence but that which it affords; the minority under a democracy has therefore a peculiar claim to consideration and care, for it is the defenceless portion of the State. The forgetfulness of this fact is the evil to which democracies are especially exposed, for while "Might is Right" is the doctrine that distinguishes the tyranny of despotism, "Minorities must suffer" is the doctrine, equally false, cruel and deadly, of the tyranny of democracy. Where the rule is that of the majority the responsibility rests upon it to see that the rights of the minority are not invaded, or its members wronged; in a word, to secure that minorities shall not suffer.

Sovereignty must be exercised in full acknowledgment of God's sovereignty, and shaped after its image; as pure, as just, as merciful, and as beneficent. And Liberty stands upon the same sanction, for God alone is Free, and true Liberty comes from Him alone, and must be shaped after His image. As already said, our knowledge of the Divine Freedom is in the freedom of his gifts; so the freedom of man is shown by the willingness and abundance of his gifts of service to others. And

in such service, his own nobility and his powers of mind and body are far more surely built up than by any despotic repression of his fellow-man.

Sovereignty is of God and from God, and must be administered as from Him. Not less, therefore, must it be revered and obeyed as such. Liberty is of God and from God; human personality is the highest gift of God, the quality in which our likeness to Him chiefly stands, upon which all our relationship to Him is based. Therefore our own liberty is to be used in the likeness of the Divine beneficence, and not less is the liberty of others to be revered by us as the supreme Divine gift to them.

The "true temper," the right adjustment, of sovereignty and liberty, how is it to be attained, and once attained, how can it be preserved? Can anything be more difficult for the governor than to maintain due authority, and yet never trench upon liberty? Or for the governed to secure respect for his individual freedom, and yet never fail in rendering due obedience?

It is most difficult; how should it be otherwise? The problem is with each one of us daily, and is perpetually changing its form. To reach in every case an immediate and right solution means the highest discernment, wisdom and self-control. The training and shaping of but a single man to be perfect in all his relations with other men; neither overbearing nor servile, but unfailingly considerate, and at the same time independent, how great a task it is; so great a task that if there had not been One Perfect Example, we should say that it could not be accomplished.

There has been One Perfect Example; not without cost has it been presented to us; for of Him it is written—"yet learned He obedience by the things which He suffered."

The "true temper" of sovereignty and of liberty for the individual man can only be found where the One Example presented it—in Character. And that Character rested not in any bodily strength, not in any intellectual acuteness, but in that continual fashioning of the spirit which resulted from unbroken communion with God.

When we come to consider World-Empire—that is, the uniting together of all men, whatever their race and nation, in one corporate organization, in which each unit shall nevertheless possess room for full development and growth—we see that it is only in the Christ-like spirit that it can find its fulfilment. For the differences between man and man, between nation and nation, even between multitudes of men as compared with the

few, are insignificant in face of the difference between God and man. Therefore it is in God, and in the following of that Man Who lived "by every word that proceedeth out of the mouth of God" that we can, alone, find the sanction for World-Empire.

World-Empire, founded upon and exercised in the spirit of these principles would be indeed desirable, and in it the cities and nations of the earth would find unity; and because unity, therefore peace, plenty, and the power of mighty achievement. And such World-Empire is that

One far-off Divine event,
To which the whole Creation moves.

These, then, are the principles of World-Empire: the principle of Sovereignty, the principle of Liberty; both Divine.

DISCUSSION.

Mr. M. L. ROUSE, while agreeing with the Lecturer that the Roman State showed a certain liberality of spirit towards its subject peoples, thought that it could not be credited with liberality in general; the strength of the Roman sway lay in its system of colonies, but its general character was well described by Daniel's vision of the fourth beast—"dreadful and terrible and strong exceedingly; and it had great iron teeth; it devoured and brake in pieces, and stamped the residue with the feet of it."

Col. MACKINLAY proposed a vote of thanks to the Lecturer, and thought that the Institute was to be heartily congratulated upon this excellent paper, which was at once the inaugural lecture in their new premises and opened the new session. The Lecturer had laid down sound reasons for the growth and decay of mighty empires in the past, and had enumerated the four greatest empires existing at the present day, but he had not forecasted their future. But, applying the principles which the Lecturer had enunciated, might we not look forward hopefully to the continued prosperity of the British Empire? It looked as if our line of progress lay in the development of our own sparsely occupied but vigorous colonies, not in the acquisition of fresh territories. Aggressive wars had no attractions for us; we sought for peaceful growth. It must be remembered that a war could last only for a time; it was therefore wise so to wage it that when it was over peace and confidence might

be re-established as soon as possible. This had resulted between the Boers and ourselves to a surprising extent. It was not only just and right to avoid "frightfulness" and cruelty in war: it was also politic and wise. He hoped the time would never come when our rulers, swollen with pride, should treat the nations associated with us under our flag with aught but justice, sympathy and honour. He hoped that one result of this present struggle would be a greater simplicity of living and a much better preparedness should war be again forced upon us in the future. Above all, let us, as a nation, give honour to God and obey His Word. So doing we might reasonably hope that our Empire might continue to prosper in the future, not to the exclusion or suppression of others, but as the leader in good government and freedom.

Prof. LANGHORNE ORCHARD desired heartily to second the vote of thanks to the Lecturer. The Roman Empire had been the best of the ancient world, and he thought the British was the best Empire of the modern world. The Germans had been led astray by their military caste, and by philosophers and historians like Nietzsche and Treitzschke, into thinking that there was something noble in the enslavement and oppression of other nations. There was something far higher and nobler than that, namely, to help and uplift them. According to Plato's definition, the aim of right government must be the advantage of the governed. The laws were to be obeyed, but the essence of right law was that it must be for the good of those who were subject to it. God Himself was the Governor of the universe, and His rule manifested itself in authority, in wisdom, and in love. Would there ever be a World-Empire? Yes, most assuredly. The nation of Israel shall be restored to its own land, and the Son of David shall be its King. Of his Government there shall be no end, and his Empire will be the perfect World-Empire, for the three great principles of authority, wisdom and love will there be seen in exercise; and the subjects of that kingdom will gladly render the obedience of free will.

Dr. PINCHES thought the references of the Lecturer to the Assyrian and Babylonian Empires were in the main correct, but doubted whether their kings had consciously entertained the idea of setting up World-Empire. Probably the chief motives of their wars were the desire for plunder and the wish to create a dread of their prowess in the neighbouring states.

The discussion was then continued by Dr. W. WOODS SMYTH and the Rev. J. J. B. COLES, and the PRESIDENT summed it up by remarking that they had had presented to them a very able epitome of the world's history. With regard to the attempts which had been made by would-be world conquerors to impose their authority by force of arms on the whole known world, he said :—

“The eighth commandment is, to my mind, of universal obligation. I protest against blasphemous cant. I wish to denounce any man who thinks himself appointed by God to take possession of somebody else's property. It seems to me to be a very bad principle indeed, and I cannot allow the discussion to pass without raising my voice in opposition to the notion that because a very big crime is committed it is to be treated as though it were a little crime. Any emperor who wants to take somebody else's land is a dirty thief, and I do not approve of the sort of delicacy which would prevent our expressing ourselves plainly as to actions of that sort. They are actions of which any man should be ashamed. What is the notion of world-conquest? There is something which you don't possess yourself and which you are going to make your own. By such means you are to carry your grandeur and your glory to the uttermost parts of the earth, and whether the offender be Napoleon or Sennacherib, he ought to be hanged. The principle of world conquest means that by violence and force you are to take that which belongs to another, and in doing so you are to inflict suffering upon your fellow-men. I trust that one of these days we shall arrive at a general concession amongst mankind that all people who are established in the country of their own shall remain in possession of it, not to be disturbed unless such interference shall be fully justified. It might sometimes, perhaps, be justified for one nation to interfere with another, but to dispossess a nation of its country or its liberty should never be allowed as a principle of Empire. The one principle we have to establish is, ‘Thou shalt not steal.’”

After the LECTURER had replied briefly to the vote of thanks, Mr. E. J. SEWELL proposed, and the Venerable Archdeacon BERESFORD POTTER seconded, a vote of thanks to their President, the Earl of Halsbury, for his presence with them that afternoon in the chair, and the vote was passed by acclamation. The Meeting adjourned at 6.20 p.m.

561ST ORDINARY GENERAL MEETING.

HELD IN THE CONFERENCE HALL, CENTRAL HALL,
WESTMINSTER, ON MONDAY, JANUARY 4TH, 1915,
AT 4.30 P.M.

PROF. H. LANGHORNE ORCHARD, M.A., TOOK THE CHAIR.

The Minutes of the preceding Meeting were read and confirmed, and the SECRETARY announced the election of C. E. Buckland, Esq., C.I.E., as an Associate of the Institute.

The CHAIRMAN said it was his very pleasing duty to ask Professor Margoliouth, who was well known to the Members of the Victoria Institute, to read a paper on a subject of no ordinary interest, "Homer, his Life and Work."

THE LIFE AND WORK OF HOMER.

By the Rev. Professor D. S. MARGOLIOUTH, D.Litt.

THE speculations called *Homeric Criticism* were started in the year 1795 by the Halle Professor, F. A. Wolf, who summarized the result of his researches as follows: *the voice of all antiquity, and generally speaking a unanimous tradition, attests the fact that the Homeric Poems were first committed to writing by Pisistratus, tyrant of Athens, who died 527 B.C., and by him arranged in the order wherein they are now read.** This supposed result can only be characterized by a phrase too harsh for this audience; for Wolf's main proposition is attested by no ancient writer whatever, and contradicted by many, who either assert or imply that Homer, like other poets, wrote his own works, and indeed in the Ionic alphabet wherein they are written and printed. The only ancient author who speaks of a period of oral transmission is the Israelite, Flavius Josephus, scarcely an authority on Hellenic literary history, and notoriously untrustworthy on all subjects; he is contradicted by his contemporaries Plutarch and Dion Chrysostom, and even by his

* Prolegomena ad Homerum, xxxiii.

countryman, the translator of Ecclesiasticus, who two centuries before had studied in Alexandria, then the focus of Homeric learning, and thinks of epic poets as writing their works.*

Of the author to whom the world owes the *Iliad* and the *Odyssey* the Hellenes apparently knew little. They state, or rather assume, that his name was *Homeros*, a Greek word signifying "hostage," which when applied to a child—as a novelist informs us—means *hostage to each parent for the loyalty of the other*. Clearly this name might be given to any child, whence no inference can be drawn from it. They also regularly associate with his name the title *Poet*, variously interpreted as "Author," "Versifier," and "Romancer." Accordingly to all, this title is pre-eminently his: according to some, it is his exclusively.

It was thought remarkable in antiquity that Homer did not, like other authors, mention his own name at the beginning and end of his works; yet it was either known or suspected in some quarters that this anonymity was only ostensible; that there was somewhere a cryptic signature. The clearest hint of this is to be found in the Latin verse translation of the *Iliad*, perhaps of the first century of our era. Its author has introduced his own name *ITALICUS* into his rendering of the prologue by means of an acrostich. The eight lines whereby he has rendered the seven of the original begin successively with the letters of his name *I ram, T ristia, A tque*, etc.

The employment of the cryptic signature can be traced to an early period of Greek literature. Epicharmus, about 500 B.C., is said to have armed most of his works with cryptic signatures, proving that they were his. In the fourth century we read of a poet substantiating his claim to the authorship of a pseudonymous work by pointing to a cryptic mark of the kind.

The presence of such a signature is almost always revealed by something unnatural in the text which it underlies, since the letters have to do double duty, and, like other servants, cannot serve two masters with complete fidelity. The prologue of the *Iliad* contains in profusion signs of an underlying cryptogram. Every word of the first line is calculated to provoke criticism, and four out of the five words of which it consists actually did provoke it. We need only quote what has been said about its first word, *μῆνιν* "Anger." This shocked antiquity as an unlucky commencement; a literary work should begin with a

* xliv. 5, *διηγούμενοι ἐπη ἐν γραφῇ*.

lucky word. In the second place it is not even appropriate; for the subject of the *Iliad* is not so much the *anger* of Achilles as his *glorification*. F. A. Wolf suggested re-writing the passage so as to commence with the lucky and appropriate word *κῦδος*, "Glory." In ancient times other expedients were tried to evade the difficulty.

A translator rarely introduces such an artifice as that employed by Italicus unless his text contains something analogous; but he is often compelled to substitute something simple for something complicated, when reproduction of the latter exceeds his power. The prologue of the Greek *Iliad* certainly displays no acrostich; but with the kindred artifice, the *Anagram*, the name of Homer is associated by his Byzantine commentator Eustathius, and such association can be traced far earlier. The author of the first monograph on Homer, Theagenes of Rhegium, in the sixth pre-Christian century appears to have applied the principle of the anagram in determining the import of certain Divine names. Even earlier the poet Hesiod appears to have applied it in determining the parentage of a Homeric hero.

The gulf between the acrostich of Italicus and the Homeric anagram is bridged over by a Sinhalese poet, Dunuvila, who has substituted the double for the single vertical column, distributing the letters of his name over four lines, thus: *DU NU VI LA*; each of these pairs of letters successively commences a line. The plan of Homer in the prologue of the *Iliad* is the same, except that he has substituted the anagram for the acrostich. The fourteen letters which constitute the first two vertical columns *MH OT ΠO HP OI EΞ AT* give the anagram *OMHPOT ΠOHTA EΞ of Homer, Poet, from*. We now see why he began with the unlucky and inappropriate word *MHNIN*; its first two letters were the second and third of his name. The fifth line was ejected by some critics, and gave offence at an early period; its first word, however, contained the second and third letters of his title.

Now accident can ordinarily be distinguished from design by the fact that the former gives either too little or too much; the latter gives precisely what is required. The occurrence in this anagram of the author's name and title, and both in the same grammatical case, appears to exclude the possibility of accident; still there remains the preposition "from," which cannot well be taken with these words, yet must have some purpose if we have before us the work of design. If, however, the next pair of vertical columns constitutes a second anagram, we shall be

unable to read it without some rule; and what is equally desirable is some instruction from the author himself to look for such puzzles in his works. For we have no wish to find in them anything which he has not himself put there.

The instruction and the rule which we seek are to be found in the place where they should be sought, viz., in the line which precedes the epilogue of four lines which closes the *Odyssey*. The anagrammatic value of that line is an iambic verse with part of another giving the sense*: *Thou, who at some time seekest the prayers of Homer and of the Iliad, find them somehow*. The language of this instruction is that plain Greek which would have been understood at any time from Homer's day to our own.

The instruction gives us most of the guidance which we require. What should surprise us is not the absence of the Poet's name at the beginning and end of his works, but the absence of *prayers*; and indeed such a work ought to commence with a prayer to Apollo, as we know on the authority of one of the Homeric Hymns, which declares that it should end with mention of this deity also. We cannot doubt that so pious a poet would have regarded this as a matter of the utmost importance. We are then told to look for the prayers and find them. Probably they are in the form of anagrams, like the instruction itself; and probably they will be in iambic metre, like that instruction.

What the reader now has is the content of the puzzles—prayers; the nature of the puzzle, anagrams; and the rule for arranging the letters, viz., iambic metre. The seat of the puzzles is doubtless the prologues and epilogues, which are clearly marked off. It is left to him to discover the anagram-unit, i.e., the number of vertical columns to be taken together, and then to arrange the letters within those groups so as to furnish iambic verses correct in grammar, metre and sense. If this can be done, then the cryptic instruction and the cryptic prayers will confirm each other; corresponding as key and lock.

The first of these puzzles is formed by the four lines which immediately follow the instruction and constitute the epilogue of the *Odyssey*. The anagram unit is four vertical columns, or sixteen letters; the result is as follows:—

* ΜΗΠΩΣΤΟΙΚΡΟΝΙΔΗΣΚΕΧΟΛΩΣΕΤΑΙΕΥΡΥΟΠΑΖΕΥΣ = ΕΥΧΑΣ
ΟΜΗΡΟΥ ΚΙΛΙΑΔΟΣ ΖΗΤΩ ΠΟΤΕ ΕΥΡΙΣΚΕ ΠΩΣ.

*Having come at last to the end, offer a fervent prayer. Goddesses, who made the lay wherein I have presented Odysseus, how he wrought and endured acts of enmity unmatched in magnitude: may as great acts of kindness be wrought about it, if it seem good to the gods and to you, ye goddesses.**

The next which comes for solution is the prologue of the *Odyssey*, which is a very miracle of the Poet's ingenuity; his ten hexameters here are to be divided by vertical lines between every pair of columns; there result twenty anagrams, of which sixteen are of twenty letters, giving a preface of thirteen iambic lines, thus:—

Thou (in a sense), Apollo, art the author; O king, be very gracious; "expelling" the load of cares which has entered, come enter us, and bear aloft one well accustomed to such a journey. Thou didst bid me lay down Carnage and Strife there whence they once arose; to turn the War-god towards his northern home; to propitiate on the earth's account her child Erinys with sacrifices, prayers and pyres; and after this in payment of thy due reward, O son of Laertes, to compose as many lays as Homer, recommended by the choice, brave son of Aeneas, was chosen by Ilion to compose for her. But for this, Apollo, the scion of Aeneas would by offers of reward have turned my mind to some fresh Trojan theme.†

* πολλὰς ἀφίκων τέρματα δὴ τοῦ ἀράς· θεαί,
αἱ κάμον αἰοδῆν, ἦτ' ἔθηκ' Ὀδυσσῆ' ἐνί,
ὅππῃ τε ἔρδε δῆι' ἔμιμνέ θ' ὅσ' ἄμαχα,
τόσ' ἀμφὶ ἔο ἔρδοιτο κήδει' ἔργ', ἐὰν
θεοῖσι χυμῖν ἦν, ὧ θεαί, δοκῇ.

Authority for ἀφίκων is given by Veitch, *Greek Verbs*, 1871, p. 296; in the work of which this paper is an abstract it is proposed to justify every phrase, form, and thought which these and the other verses produced here contain.

† σὺ πη, πατήρ, Ἀπολλων· ὧ ἄνα,
πολλ' ἴλαθ'· "Ἰλλων" δύντ' "ἀγρόνδ'" ἀχῶν γόμον,
ἴθ' ἄμμε δὺς αἶψ', ἄγων ἀήθε' οὐ
όδοιο. κατθέντ' ἔννεπες Σφαγῆν ὄθεν
ποτ' ὦργ' Ἔριν τ'· Ἄρεα τόπου ἐο, Βορέω,
τρέψαντ' ἐπ' οἴμῳ· σὺν θυσίης, εὐχῆς, πυραῖς,
Γῆς παῖδ' Ἐρινὺν ἔνεκα θεραπεύσαντ'· ἄφαρ
τίνοντι σὺν, Λαερτιάδαο γ', ἀθλίου
τέλος, ποεῖν τόσ' ὅσος ἔλετο τὰ ἀ κλέα

We come next to the colophon of the Iliad, which is to be found in the last four lines. The cryptogram, as it tells us itself, extends to the first three only, the last line being a *chronogram*. Its import is the following:—

*Be thou two prayers, O turningpoint, and thou one thing,
O end. One prayer is: May all this which Homer sings,
the war that befell Ilios, now be published; and a
second: May thy epic, Ilios, please.*

The “one thing” which follows is the chronogram made up of the initials of the words in the last line;* this may be read *in the year 871 or in the year 874*.†

We now return to the puzzle whence we started, the prologue of the Iliad. We have already seen that the anagram-unit is fourteen letters, or two vertical columns. Its import is the following:—

*O gracious deity, who from the Poet Homer's boundaries didst
expel the contrary fiends: enter the way thou camest
then, and enter all over us, and delight us, playing notes
worthy of thyself. Breathe sweetly, charm of this story,
through the ears of the son of Aeneas; leave Eastern
things afar, O Ilios, and come near to Hellas, if her
Cypris and her Athene still survive; that the happy
lyre may crown thee with fair fame.*‡

Ομηρον Ιλιον ποεῖν, ὃν ἐπήνεε
κριτὸς θεὸς τόκος Αἰνέας. πρὶν μὲν ἂν
τιμαῖσι θυμὸν ἦγ' ἐπ' ἄλλο ῥῆμ' ἐμόν,
* Ἀπολλων, ἔρνος Αἰνέας Τρωίων. See Appendix.

* Ως Οἷγ Ἀμφι Ἐπον Ταφον Ἐκτορος Ἰπποδαμοῖο or Ως Οἱ Γ, etc.

† The anagram-unit is 15 letters or five vertical columns, thus:—

δύω μὲν εὐχά, νύσσα, γίνε', ἐν δέ τι,
πέρας. μίᾱ μὲν “Ὅμηρος ὁ τόδ' αἰδιᾷ
πᾶν, Ἰλιὸν τ' ἐκ νῦν φέροιτ’ Ἀρεὺς ὁ βάς.”
καὶ δευτέρα “τᾷπῃ ᾄδοι τὰ σ' Ἰλιε.”
‡ ποιητᾷ Ὅμηρου ἐξῆλλων ὄρων,
ὦ σὺλε δαῖμον, Δηίας ἐναντίας,
τῇ δῦσε' ἢ τότ', ἡδ' ἐφύπερθεν ἀμμέων
πᾶς δῦθι, τέρπε δ' ἀξίας οὐ ἰαχάς
ψάλλων. διαῖ' ἡδύ, ἱστορίης χάρι
ὥτ' Αἰνεάδαο τῆσδ' ἔα τύνῃ ἐκάς
έώι', ἄγχι δ' ἔρχε' Ἑλλάδι, ἔο
εἰ Κύπρις, Ἰλιε, ἔο τ' Ἀθήνη σόα,
ἴν' ὀλβία χέλυς σ' εὐ στέψῃ κλέος.

In spite then of Dion Chrysostom's assertion, Homer, like other authors, has mentioned his own name both at the beginning and at the end of each poem, and those who, following his instruction, seek the *prayers of Homer and the Iliad* are able to find them. The cryptograms perform some four functions. In the first place they are prayers offered, as they should be, in secret to the Reader of secrets. Secondly, they vindicate the Poet's claim to authorship against the possibility of dispute. Thirdly, they furnish evidence of his extraordinary command of the language which he writes; for even the easiest of these puzzles could scarcely have been constructed by anyone else. Fourthly, they enable the Poet to drop his mask and tell us something about himself.

First we must endeavour to interpret his date, 871 or 874. The only document which helps us in this matter is the Parian Chronicle of the year 264 B.C., which has not indeed an era, but uses as the beginning of history a year which synchronizes with 1582 B.C. If this be the era of the chronogram, the resulting date is 711 or 708 B.C., of which the latter is the first year of Olympiad xviii. Now this very Olympiad xviii was given as the date of Homer by Euphron of Chalcis, who was born 280 B.C. Probably then Euphron noticed the chronogram, and interpreted it by the same era. He made Homer contemporary of the Lydian king Gyges, whose reign, according to him, began then. The synchronism of Gyges seems to be in accordance with the Chronicle, though it places Homer far earlier.

There are, however, certain internal considerations which bring us near the date 708. The chain of Greek poets other than Homer can be traced to about Olympiad xxvii; and all these, as the Hellenic critics observed, are imitators or reproducers of the *Iliad* and *Odyssey*. It must be remembered that those who make this assertion had access to a far larger mass of Greek poetry than we, and that their opinion is thoroughly borne out by what we have. Now, a commentary must be later than its text, yet not necessarily much later. The generation which intervenes between Olympiad xviii and Olympiad xxvii is quite sufficient for our purpose. And indeed we should expect that imitation would commence very soon when once the great classics had spread far and wide.

On the other hand it can be shown that the Ionic colonies were earlier than the composition of the *Iliad*, and these are first mentioned in Oriental documents about the year 725 B.C. In the last chapter of Isaiah *Yavan* figures as a nation with which communication has only just been established. The date

of the Poem is then somewhere between the establishment of these colonies and the commencement of the historical series of Greek poets. The date given by the chronogram comes in this period, which is not very lengthy.

The Troad, to which the *Iliad* belongs, enters history as a settlement of Aeolian Greeks. The date of that settlement is not certainly known, but evidently the Troad had not been Hellenized previously. In the *Iliad*, however, the prehistoric heroes of Ilios are given Hellenic names, a proceeding for which as we have seen, the cryptic preface apologises, somewhat as Plato in the *Critias* explains away an analogous Hellenization of barbarians. Whether these heroes were historical or fictitious, they were certainly not Hellenized before this Aeolian immigration. The name *Ilios* or *Ilion* is very clearly Semitic, meaning city of *Il*, the Hebrew *El* in *Bethel*.

The cryptograms tell us that the community resident in this place on the recommendation of *the Son of Aeneas*, who is mentioned in this context three times, selected the Poet Homer to compose its lays in 24 cantos. The text of the *Iliad* lets us know that *a son of Aeneas* was the author's patron; it prophesies that the descendants of Aeneas shall rule over the Trojans. We may conclude that this person, whose name was probably *Aeneades*, was tyrant, or at any rate chief magistrate, in this place.

The work, when issued, succeeded perhaps beyond the Poet's hopes; we learn that fresh offers were made him for another Poem on a kindred theme; analogy would suggest that Aeneades would have liked his own exploits to be thus celebrated. Apollo commanded the Poet to abandon the subject of war and to compose the *Odyssey* in the same number of lays as the *Iliad*.

The reason why Ilios, though the home of the *Iliad*, ceased to be connected with it and generally with poetry, is to be found in the Cimmerian invasion, dated by Herodotus in the reign of the Lydian Ardys, wherein according to Strabo all this region was overrun. This event accounts for the breach in the continuity of Ilios and the tradition therewith connected.

At no time does the city appear to have been of any considerable importance, since its existence in early ages seems to be known only from the Homeric Poems. Nor are we to suppose that when Homer was employed to compose its lays he was expected to utilize historical materials; it is most improbable that any such existed. What he had to do was to compose a fiction which would be agreeable to both the Hellenic ruler and the non-Hellenic population. And in the main the *Iliad* is a political pamphlet with this tendency. It is shown that this

Hellenic ruler is the true heir to the throne, for by the plan of Zeus the older dynasty of the same family had been extinguished. The ancestor of Aeneades who came next in succession was by no means responsible for this; on the contrary, he had done his utmost to save the house of Priam. By Divine intervention he had been rescued from the field wherein his desperate valour was likely to prove fatal to him, and so been able to found a line which duly inherited Priam's throne. On the other hand Aeneades was also a Hellene, whence the prehistoric conquest of Ilios by the Hellenes gave him another claim to the sovereignty.

To fictions of this sort analogies can easily be found. It seems to furnish wonderful consolation to a conquered people to be told that their conqueror is one of themselves and indeed the legitimate heir to their throne. Hence Alexander the Great in the Egyptian form of his biography is made out an Egyptian. In the Aeneid when Aeneas comes to Italy it turns out that his ancestor was an Italian. In the official chronicle of the Ottomans, it is shown that although their founder was at first in the service of the Seljukes of Asia Minor, whose throne his descendants inherited, he had nothing to do with the overthrow of that dynasty; on the contrary, he was its bravest champion. Only Allah had decreed the fall of the Seljukes and the rise of the Ottomans, who were to last for ever.

With the Hellenes, we are told, the next best thing to winning a battle was winning a horse-race. Aeneas *ex hypothesi* cannot win the battle between the invaders and the Trojans; an opportunity has then to be found wherein he can win a horse-race. In the chariot-race of the Hellenes, as in the modern horse-race, it is the owner who gets the glory. Funeral games are provided wherein the horses of Aeneas win, whence their owner is consoled for his unavoidable defeat in the field. But a fresh Divine intervention is required to enable these horses to take part in the race.

For the rest the Poet employs the framework of the familiar love-story, which begins with the parting of lovers, and ends with their re-union. Everything that intervenes has something to do with the result. The parting brings about the re-union by an unforeseen chain of causation.

The chief features of Homeric composition were skilfully made out by Aristotle. He observed that in these Poems nothing could be omitted or displaced without the whole suffering. In a way then, it may be said that the process of composition commences from the end. The last line is thought out before the

first is composed. The cryptograms are in miniature what the Poems are on a great scale. Since in them the rows of vertical groups constitute a set of verses no less continuous than the wholly different set constituted by the horizontal groups, very clearly the composition did not proceed straightforward; everything is dovetailed with the greatest ingenuity into an excogitated scheme, and it is impossible to say which line was composed first or last. He who reads either the *Iliad* or the *Odyssey* with Aristotle's guidance will find that the same skill exhibits itself only on a vastly greater scale. The genius of Homer is evidently that sort which can take infinite pains.

In the second place Aristotle observed that the names of the characters were chosen after their functions had been assigned them and were indicative of those functions. It is decided that for the purpose of the story, Ilios is to have *one* defender, whose death involves the fall of the city; to him then the name *Hector* "holder" is given. Often, if not invariably, the interpretation of the name is given somewhere by the Poet himself; but the names are not casual, though at times without such guidance we might not easily tell their appropriateness.

If we endeavour to estimate the services rendered by Homer to his countrymen, we shall naturally group them under some four heads.

As we have seen, the later verse literature is wholly dependent upon him; but what surprises us in the cryptograms is that he by no means claims to commence Hellenic poetry. On the contrary he uses language which reminds us of far later periods in the history of the Hellenes; who both before and after the Roman conquest refused to acknowledge that there was any literature but theirs; who supposed themselves to be intellectually as superior to other races as mankind generally are to the brutes. In this spirit Homer tells Ilios that if she wishes to be crowned with poetic fame she must abandon the East and come near to Hellas, to which country the goddesses of beauty and wisdom belong. It would appear then that Homer does not represent the infancy but the adolescence of Hellenic poetry; and indeed we cannot imagine the first book in a language armed with elaborate cryptograms and a chronogram. Only literature like the human being "when it becometh a man putteth away childish things." When the production of a truly classical work has raised the standard perceptibly, the immature works which have preceded it are liable to fall into oblivion, especially where writing material is cumbrous, and, as is the case with the wax tablet,

can be repeatedly used for different matter. In such a case the new has a tendency not only to supersede, but to destroy the old.

The second great service rendered by Homer was that he provided his countrymen with the beginnings of history. There is no reason for supposing that of the whole mass of heroes found in the two poems any had ever been heard of before he composed. Indeed it is clear that the Athenians, who claimed to be indigenious, learned the names of their ancient heroes from the *Iliad*, having themselves no traditions about the series of their rulers; and if this was so in Athens, doubtless the same was the case in less literary areas of Hellas. It would, however, seem to be generally true that just as men acquire wealth and station before they want pedigrees, so a community must have accomplished something great before it feels the need of history. There are cases wherein we find the same man pedigreeless before he has acquired fortune and with a lengthy pedigree at a later period; thus the father of that Othman who founded the Ottoman empire appears as a modest leader of a Turkish tribe in the chronicle of the Seljuks of Asia Minor, but in that of the Ottoman Sultans he has a pedigree of fifty generations. These ancestors must indeed have existed, but as they achieved nothing of consequence their names were not remembered, and had afterwards to be conjecturally restored. Similarly continuous Hellenic history commences with the Persian Wars; something had been accomplished which was worthy of commemoration, and history arose. The fictions of Homer then provided a past to which the present could be linked; when princes required ancestors, these could be found in the Homeric poems. The names of these ancestors ordinarily show that they were created for the romance wherein they play a part; but just as the real man (to use the phrase of Horace) becomes by death a fable, so the hero of fiction has a tendency to become historical. A recent writer called Spain the land of Don Quixote and Ignatius Loyola, as though both were equally historical or equally fictitious. The house at Chertsey which Bill Sikes attempted to rob was recently pulled down.

The third service rendered by Homer was according to Herodotus that he assigned the gods their pedigrees and their functions. This cannot of course be accepted without modification; thus we learn from the cryptograms that the functions of three deities are assumed, those of Apollo, Aphrodite and Athene. Nevertheless the later theology is so clearly based on what can be found in the *Iliad* and *Odyssey*, that Herodotus is

evidently right in assigning Homer a considerable share in the process whereby the Greek deities were made into a family, the members of which to a considerable extent had their own particular duties. And it must be observed that Greek theology seems to be almost entirely native; attempts which have been made to deduce the system from any other have been failures. Only one name appears to be shared by the Indian and the Hellenic pantheons, that of *Zeus*: but in the Indian system he is merely a poetical personification of the sky, the fertilizer of the earth; in Hellas he indeed retains that function and is not quite distinguishable from the rain, but the working of sound laws has connected his name with the verb *to live*, whence he becomes identified with the principle of life, and indeed life in its highest form, viz., royalty. The transition from the rain-god to the father of gods and men, and indeed the Almighty, who alone produces every result, is therefore one that has taken place within Hellas, and is a consequence of the process whereby the Greek language was developed. This solitary case then, wherein the Indian and the Greek pantheons have a common name, is an exception which proves the rule.

There is, of course, no reason why in a polytheistic system the deities should either be affiliated or have special functions: for normally it would appear that a deity belongs to a community, and does everything for that community. This would naturally be the case where a deity was merely an expression of the community, as is *Athene* of Athens; *Athene* is to Athens what *Britannia* is to Britain. *Athene* is very clearly a city name like numerous others of similar formation, but becomes personified in the goddess of the place. She is perhaps the clearest case of this phenomenon, but there are others wherein it is only faintly concealed. Such a being is naturally concerned with everything that affects the well-being of the community whose name she bears. And there is no more reason to affiliate her than there would be to name both the parents of the *Virgin daughter of Zion*.

The idea then of making a family of the gods implies original thought, and this may conceivably be Homer's. Where he devotes some space to making out their genealogy, it is highly improbable from the original character of his mind that he is embodying traditional material: and at times the allegorical nature of these genealogies lies on the surface. When the War-god is given for sons Flight and Fright, it is evident that this is a poetical way of saying that war causes panic; Flight and Fright do not thereby become material, it is rather the War-god

who stands in danger of becoming ideal. When we are told that Prayers are the daughters of Zeus, the former do not thereby become persons, it is rather the personality of Zeus which becomes precarious. When therefore Theagenes of Rhegium introduced the allegorical interpretation of Homeric mythology he was fully within his rights.

The clues which determined the functions were ordinarily if not always etymological. The works of the Greeks which deal with etymology are therefore of value, not for the discovery of the real origin of the names, but because they show us what ideas those names suggested to a Hellene. Plato is doubtless right, *e.g.*, when he interprets the name *Athene* as "the Divine reason," in the sense that he has hit on the etymology to which the goddess owes her function. The Greek commentators on Homer usually point out that where she suggests a course to a hero, she merely stands for that hero's intelligence; she is no more a person than Strife the sister of War, or his sons Fright and Flight. If the question be asked "How comes such an abstraction to have temples and sacrifices, priests and worshippers?" we are confronted with a psychological puzzle which we are unable to solve. We know that the Athenians offered yearly sacrifice to *persuasion*, a goddess who scarcely deserves a capital letter. They cannot well have imagined that so ideal a process as persuasion can have been propitiated by sacrifice; still less have enjoyed either the taste or the odour of the offerings.

So far then as the Greek deities were survivals of older cults, their assumption of functions had a tendency to spiritualize them, as we have seen to happen in the case of Zeus; it does not, however, seem possible in any case to identify one of them certainly with a member of an older pantheon belonging to the same territory, though a plausible case may be made out for one or two names. The extent to which in the worshipper's mind the fetish or tribal deity was sublimated would depend on the mental capacity of the individual. The quality of the poet's work which may be called depth of focus, *i.e.*, the power of appealing to young, middle-aged and old, to the weak-minded and the strong-minded, and of charming all alike, is to be found in his theology no less than in his narratives.

In the fourth place Homer is credited by the Hellenic critics with founding their philosophy, not only in the sense that his works provided texts and illustrations for all their preachers from Plato to Epictetus, but also that he initiated speculation on the origins of things. As the lord of the world he regards

the principle of *Life*; to this principle he assigns parents, *Cronos and Rhea*; the latter name is (as indeed Plato observed) simply the Greek word for *currents*, whereas the former is only a dialectic variant of one which signifies *fountain-head*. There is no reason for supposing that either of these deities had been known before. The allegory is, therefore, as little disguised as in the names of the *Pilgrim's Progress*; the ultimate analysis of the phenomenon of life into a fountain-head and currents implies at least some speculation on this subject. And the names of the parent deities would no more *accidentally* mean these things than the letters of the cryptograms could accidentally furnish two sets of verses. It can be shown that the chief ideas of the Aristotelian philosophy were learned from the Homeric poems by their ablest interpreter. For, indeed, the comments of Aristotle which have been preserved indicate a greater grasp of the structure and purpose of the *Iliad* and the *Odyssey* than is exhibited by any other student of them.

There appears to have been no time at which free criticism of these poems was forbidden, and though Homer is pre-eminently *the Poet*, he is often treated as the first among equals; yet, he was never actually dethroned, and the place which his works occupy among the Hellenes scarcely differs from that which the Koran claims among Moslems. That fame was then won because it was deserved. He was not superseded because he was neither surpassed nor even equalled. And this was because his productions were not naïve, but in the highest degree mature: not improvised, but the fruit of toilsome reflexion and elaboration. In this case as in others the time spent on the production has paid its interest in the preservation of the fruit.

APPENDIX.

Prologue and Preface of the Odyssey.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
AN	ΔP	AM	OI	EN	NE	ΠE	MO	ΥΣ	ΑΠ	ΟΛ	YT	PO	ΠO	NO	ΣM	AA	ΑΠ	ΟΛ	AA
ΠA	AT	XΘ	HE	ΠE	IT	PO	IH	ΣI	EP	ON	ΠT	ΟΛ	IE	ΘP	ON	EP	EP	ΣE	
ΠO	AA	ΩN	ΔA	NΘ	PΩ	ΠΩ	NI	ΔE	NA	ΣT	EA	KA	IN	OO	NE	Γ		NΩ	
ΠO	AA	ΔΔ	OT	EN	ΠO	NT	ΩI	IIA	ΘE	NA	AT	EA	ON	KA	TA	ΘY	M	ON	
AP	NY	MEN	NO	ΣH	NT	EΨ	YX	HN	KA	IN	OΣ	TO	NE	TA	IP			ΩN	
AA	AO	YΔ	ΩΣ	ET	AP	OY	ΣE	PP	YΣ	AT	OI	EM	EN	OΣ	Π			EP	
AY	TΩ	NT	AP	ΣΦ	ET	EP	HI	ΣI	NA	TA	ΣΘ	AA	IH	IΣ	IN	ΟΛ	ON	TO	
NH	III	OI	OI	KA	TA	BO	YΣ	YΠ	EP	IO	NO	ΣH	EA	IO				IO	
HΣ	ΘI	ON	AY	TA	PO	TO	IΣ	IN	AΦ	EI	ΔE	TO	NO	ΣT	IM	ON	HM	AP	
TΩ	NA	MO	ΘE	NT	EΘ	EA	ΘY	ΓA	TE	PΔ	IO	ΣE	III	EK	AI	HM		IN	

Vertical groups written horizontally and rearranged.

1	ΑΝΗΛΗΟΗΟΑΡΑΛΑΥΝΗΗΣΤΩ	ΣΥ ΠΗ ΠΑΤΗΡ ΑΠΟΛΛΑΟΝ Ω ΑΝΑ
2	ΔΡΑΓΑΛΛΑΝΥΛΟΤΩΗΗΘΙΝΑ	ΗΟΛΛ ΙΛΑΘ ΙΛΛΩΝ ΔΥΝΤ ΑΓΡ
3	ΑΜΧΘΩΝΑΔΜΕΥΔΝΓΟΙΟΝΜΟ	ΟΝΔ ΑΧΩΝ ΓΟΜΟΝ ΙΘ ΑΜΜΕ ΔΥ
4	ΟΙΗΕΔΑΟΓΝΟΩΣΑΡΟΙΑΥΘΕ	Σ ΑΕΙΡ ΑΓΩΝ ΑΗΘΕ ΟΥ ΟΔΟΙΟ
5	ΕΝΠΕΝΘΕΝΣΗΕΤΣΦΚΑΤΑΝΓ	ΚΑΤΘΕΝΤ ΕΝΝΕΠΕΣ ΣΦΑΓΗΝ
6	ΝΕΙΤΡΩΠΟΝΤΑΡΕΤΤΑΡΟΕΘ	ΟΘΕΝ ΠΟΤ ΩΡΤ ΕΡΙΝ Τ ΑΡΕΑ Τ
7	ΠΕΡΟΠΟΝΤΕΨΟΥΕΡΒΟΤΟΕΑ	ΟΠΟΥ ΕΟ ΒΟΡΕΩ ΤΡΕΨΑΝΤ ΕΠ
8	ΜΟΙΗΝΙΩΙΥΧΣΕΗΙΥΣΙΣΘΥ	ΟΙΜΟΙ ΣΥΝ ΘΥΣΙΗΙΣ ΕΥΧΗΙ
9	ΥΣΣΙΔΕΠΑΗΝΡΡΣΙΥΠΗΓΑ	Σ ΠΥΡΑΙΣ ΓΗΣ ΠΑΙΔ ΕΡΙΝΥΝ
10	ΑΠΕΡΝΑΘΕΚΑΥΣΝΑΕΡΑΦΤΕ	ΕΝΕΚΑ ΘΕΡΑΠΕΥΣΑΝΤ ΑΦΑΡ
11	ΟΛΟΝΣΤΝΑΙΝΑΤΤΑΙΘΕΙΡΔ	ΤΙΝΟΝΤΙ ΣΟΝ ΛΑΕΡΤΙΑΔΑΟ
12	ΥΤΗΤΕΑΛΓΟΣΟΙΣΘΝΟΛΕΙΟ	Γ ΑΘΛΙΟΥ ΤΕΛΟΣ ΠΟΕΙΝ ΤΟΣ
13	ΡΟΟΔΚΑΕΑΤΟΕΜΑΛΣΗΤΟΣΕ	ΟΣΣ ΕΛΕΤΟ ΤΑ Α ΚΛΕΑ ΟΜΗΡΟ
14	ΠΟΙΕΙΝΟΝΝΕΕΝΙΗΕΛΑΝΟΠΙ	Ν ΙΛΙΟΝ ΠΟΕΙΝ ΟΝ ΕΠΗΝΕΕ
15	ΝΟΘΡΟΟΚΑΤΑΟΣΙΣΙΟΣΤΕΚ	ΚΡΙΤΟΣ ΘΟΟΣ ΤΟΚΟΣ ΑΙΝΕΑ
16	ΣΜΟΝΝΕΤΑΙΡΗΙΝΙΜΑΙ	Ο ΠΡΙΝ ΜΕΝ ΑΝ ΤΙΜΑΙΣΙ
17	ΑΔΕΠΓΘΥΟΛΟΝΗΜ	ΘΥΜΟΝ ΗΓ ΕΠ ΑΛΛΟ
18	ΑΠΕΡΜΟΝΗΜ	ΡΗΜ ΕΜΟΝ ΑΠ
19	ΟΑ	ΟΑ
20	ΛΑΣΕΝΩΝΩΝΕΡΤΟΙΟΑΡΙΝ	ΛΟΝ ΕΡΝΟΣ ΑΙΝΕΑΟ ΤΡΩΙΩΝ

The text employed is the vulgate, as printed by Allen, and a century ago by Ernesti, without alteration of any kind.

DISCUSSION.

The CHAIRMAN, in announcing that the Meeting was open for discussion, said that there were several points which, he would suggest, called for debate. For instance, as to whether Josephus deserved quite so severe a comment as that applied to him on the first page of the paper. Then the date of Homer and the Author's theory of Greek mythology seemed open to discussion. It was most interesting to note how early the literary artifices of acrostics, riddles, and anagrams, came into use. The learned Professor had reminded them that, if an author in those times had put his name openly to his work some envious rival might have cut that portion out, and then have claimed the verses. There was, therefore, no doubt, some practical value in the use of the anagram. He thought

that all would agree with the statement in the second line of the second paragraph on page 39, and they would also feel that to decipher and interpret these anagrams, as Professor Margoliouth had done, was a similar "miracle of ingenuity." We, therefore, in the nineteenth and twentieth centuries, were not altogether behind those wonderful men who had flourished in such remote times, for to decipher such a puzzle was almost, if not quite, as wonderful as to invent it.

Mr. PRICKARD had admired immensely the extraordinary ingenuity and diligence of his friend, Professor Margoliouth. It was wonderful that an ancient poet should have managed to wrap up his meaning in this cryptic framework, but it really seemed to be even more wonderful that now at length, in the twentieth century, his interpreter should have come. He had no right himself to speak on Homeric study, but one point seemed to him to require explanation, and that was how the very acute minds that had dealt with Homer in past centuries had failed to give any indication of these cryptic revelations. Plutarch, who so intensely enjoyed anything ingenious, failed to indicate that anything of this kind might lie behind the Homeric poems. For the rest he would rather hear the effect on the present audience of the very remarkable paper to which they had listened. It would be a great relief to have done away with a period of assumed "oral tradition," and to have a definite literary date connected with the poems.

Mr. E. J. BROOKS said that the Greek poet Theognis, who wrote elegiacs about 546 B.C., stated in his poetry that he had "put his seal upon it in such a way that no one else shall plagiarize it." Yet after a careful search, he (the speaker) could not find any editor or critic who had any definite idea as to what the seal was. Perhaps Professor Margoliouth knew the cryptogram of Theognis or would yet be able to discover it.

Mr. E. W. MAUNDER said he thought the Victoria Institute was exceptionally favoured that afternoon by the paper which Professor Margoliouth had set before it; the paper itself was so very remarkable in its novelty, originality and importance, and this was the very first time that Professor Margoliouth had communicated it to the world. He did not feel at all competent to criticize the point round which the whole paper turned—the question of the

anagrams—but in his own line, astronomy, he had once had something to do with an anagram, and he thought that the anecdote might illustrate the use and value of the anagram in earlier times and also the danger attaching to it.

It would be remembered that when the telescope was first invented Galileo, when he made some of his earliest discoveries, was very anxious to establish his claim to the priority and yet to carry on his observations and work them out yet further before he published his discoveries to the world. The course he adopted was to write in short epigrammatic form a statement of the discovery, and then turn it into an anagram, and it was the anagram which he published. Later on, when his observations were complete, he could publish the solution of the anagram together with the fuller details. Other astronomers followed the same custom; amongst them, Christian Huygens, who used this method to announce his discovery of a satellite of Saturn in the year 1655. Among other astronomers to whom he sent this cryptogram was Dr. Wallis, a friend of Sir Christopher Wren. Dr. Wallis replied by sending a long anagram to Huygens, and when Huygens published the interpretation of his anagram, Dr. Wallis, in answer to his challenge, gave the solution of his. Both anagrams signified the same thing. Had Wallis made an independent discovery? Wallis never claimed it for himself. Was he then attempting to work off a fraud on Huygens, and if so, how did he accomplish it? He (the speaker) had gone into the subject and came to the conclusion that Wallis had simply added a number of letters to the anagram of Huygens in the expectation that, when Huygens explained the meaning of his anagram, he would be able to frame a sentence to the same general effect from the greater number of letters at his disposal. He did this, not in order to establish a spurious claim to a discovery that he had not really made, but in order to prove to Huygens that the method of anagrams was not a safe one, but was open to a falsification which it would be difficult to expose. Letters have since been published which show that this inference as to the methods and motive of Wallis was correct in every particular.

This anecdote might be sufficient to remind us that there was a time when anagrams were undoubtedly used for a purpose strictly analogous to that which Professor Margoliouth has ascribed to Homer; it also pointed out that the device was not without its

dangers. There was also a very suggestive feature about Wallis's solution of his anagram ; these astronomical discoveries were always published in Latin in those days, and the Latin of Wallis's anagram was very "doggy" indeed ; so much so, that, in his opinion, it proved that it was not an original utterance, but that Wallis had been obliged to force the words to fit an interpretation for which they had not been originally intended. That seemed to him to illustrate some of the points which Professor Margoliouth had brought out with respect to these Homeric anagrams. In the case of an anagram it was impossible so to arrange it that the language was as good in the secondary document as in the primary one, because language could not be made to serve two masters equally well at the same time. He (the speaker) was not a Greek scholar, and therefore he could offer no criticism of his own on Professor Margoliouth's working out of the anagrams, but it seemed to him that this would be a trustworthy criterion to apply to them. If the language in the iambic metre was better Greek than it was in the poem of Homer he thought it would afford strong support to the idea that they had there an actual anagram. Apart from that he should like to say how much he had been delighted with the paper and the references to Homer, because Professor Margoliouth had brought before them so clearly the wonderful position which Homer occupied in Greek thought and Greek literature—that he was truly the founder of both. Not, indeed, that Homer had originated Greek literature, but he was of such overpowering genius that he had effaced, so far as we were concerned, those who had gone before him.

Mr. M. L. ROUSE endorsed all the praise that had been bestowed on Professor Margoliouth's discovery ; the patient ingenuity shown in this unravelling of Homer's enigma closely vied with that of the poet in weaving it. That part of the solution which fixed the date of Homer's chief work as 708 B.C. had especially delighted him ; but he could not agree that Homer, whose allusions to armour and adornments and to the topography of Troy had been so well confirmed by Schliemann and others, had invented his heroes and their pedigrees. He thought the Lecturer would admit that ancient peoples preserved their genealogies better than we do to-day, and he considered that three at least of the principal Greek divinities were really the children of Lamech (Gen. iv, 19-22) who had undergone

deification. Nor did he believe that the Greek cities on the coasts of Asia Minor could properly be called colonies; he rather inferred from the tenth chapter of Genesis that they were the original settlements of the race.

The Rev. J. J. B. COLES pointed out how great had been the failure of ancient philosophies. Men had fallen into idolatry, the worship of the heavenly bodies, of human ancestors, of the powers of nature, and of abstract qualities. The Lecturer that afternoon had shown them that to Homer the Greeks were indebted for the foundations of their history, philosophy, science and religion. But in the religion of the Greeks there was a deification of the human passions.

The LECTURER, in reply, said that he would take into careful consideration the various criticisms and suggestions that had been brought forward. As regards Josephus, he had taken a great deal of trouble in inquiring into his credibility, but he feared that the result was not very satisfactory. In reply to Mr. Prickard's observation that Plutarch and other commentators did not seem to know of the cryptograms, it occurred to him that such knowledge might be handed down only by tradition, and therefore only be known to a few persons at any time. These particular cryptograms might not have been widely known because they did not answer the question in which the Greeks were most interested; that is to say, they did not reveal which was the birthplace of Homer. He was acquainted with cases in literature where an interpretation, which was not indicated on the surface, had come to light by accident. Thus there was a particular treatise among the Jews, often referred to, in which a certain phrase had been objected to by the censors of Venice and elsewhere, so that in some editions different words and capitals were used in its place. One in particular consisted of letters normally rendered "worshippers of stars and constellations." This would seem absurd, because so few of those nations with whom the Jews had to do at this period followed that particular kind of worship. But he was once told that, as a matter of fact, what those initials really meant was "worshippers of Christ and Mary." Yet he had asked several people who had studied that treatise from childhood, but had never heard of that interpretation. It was only here and there that there was someone to whom the correct interpreta-

tion of those initials was known. They might be sure that there must have been many instances of the same kind of thing in connection with ancient literature.

The Meeting adjourned at 6.10 p.m.

SUBSEQUENT COMMUNICATION.

Prof. EDWARD HULL :—Though not by any means a specialist on the above subject, I read “my Homer” with the greatest interest at school—and have never forgotten its charming story of the Siege of Troy, written as it is in the most musical of languages, and I have read the remarkable essay of Dr. Margoliouth with no less interest. The reflection occurs to me that, while the Author clearly shows how mythical are the heroes of that drama—and that their names were derived from the events and characters attributed to them—I cannot suppose that he intends to consign the whole story to the origin which he assigns to Apollo, Aphrodite and all the divinities except Zeus—namely, poetic fiction. What then comes of the discovery of Schliemann and of the ruined cities he describes? May we not suggest that there was a city at the site identified, recognisable by its geographical position as the site of Troy, and that the poet, having full knowledge of the topography of the region, made use of it as the central position for the events recorded—though it may have only been a ruin? I do not read in the Author’s paper anything that militates against this view.

There is another point in connection with the settlement of the Æolian Greeks (p. 42), the date of which is not certainly known. It must have been very ancient, and the Author states that the name *Ilios* or *Ilion* is very clearly Semitic; in fact of Hebrew origin. But there is another name no less clearly Semitic, namely *Danai*, which may, perhaps, connect the early Greek settlers with that remarkable tribe of the Israelites—the tribe of Dan. This tribe settled on the coast of Palestine, and, like the Phœnicians, became a maritime people, coasting along the Mediterranean—and doubtless visiting the Grecian harbours and islands.

562ND ORDINARY GENERAL MEETING.

HELD IN COMMITTEE ROOM B, THE CENTRAL HALL,
WESTMINSTER, ON MONDAY, JANUARY 18TH, 1915,
AT 4.30 P.M.

THE VERY REV. HENRY WACE, D.D., DEAN OF CANTERBURY,
TOOK THE CHAIR.

The Minutes of the preceding Meeting were read and confirmed.

The CHAIRMAN introduced the Rev. Canon E. McClure, and said that there were few men to whom the Church of England owed a greater debt than to the Literary Secretary of the Society for the Promotion of Christian Knowledge. He congratulated him on his courage in dealing with so wide a subject as "Modernism," since the amount of literature to be mastered was so immense. But he had great qualifications for this task, and no man was better able to fulfil it.

MODERNISM AND TRADITIONAL CHRISTIANITY.—

By the Rev. Canon E. McCLURE, M.A., M.R.I.A.

THE movement within the Roman Communion, named "Modernism" in the Papal Encyclical *Pascendi*, belongs to the present century. Its earliest exponent was Alfred Loisy, a French priest, who, in his *L'Evangile et l'Eglise* (Paris, 1902), laid down the principles of this fresh presentation of Christianity. This work was followed by other volumes of the same author, and by others emanating from the same school.

M. LOISY ON THE GOSPELS.

M. Loisy, in the work just named, shows how the Gospel is regarded from the Modernist point of view. This position may be best gathered from a short summary of his opinions thereon.

The Gospels, according to M. Loisy, are a patchwork, in which anything of an historical character is blended with a large amount of legend. The dates to which he ascribes the Synoptic Gospels are not those accepted by experts in this

country, or by Harnack in Germany. M. Loisy thinks the Gospel according to St. Mark was written at a period subsequent to the destruction of Jerusalem, probably about 75 A.D., and that its author was an unknown Christian of Hellenic culture. The Gospel of St. Matthew he ascribes to a non-Palestinian Jew who compiled it about the beginning of the second century. The narratives peculiar to St. Mark are, M. Loisy thinks, to be regarded rather as legendary developments having no historical value, than as real reminiscences. The chapters about the birth of Christ have not, in M. Loisy's opinion, the slightest historical foundation.

St. Luke's Gospel was probably written, he thinks, between 90 and 100 A.D. Certain touching passages in it—such as Christ weeping over Jerusalem, His prayer for His executioners, His promise to the penitent thief, and His last words, may, says M. Loisy, be in conformity with this spirit, but they have no traditional basis.* The genealogical descent of Jesus through Joseph was, according to M. Loisy, an interpolation introduced in order to support the later idea of a Virgin Birth. As for the Fourth Gospel, it is in no sense historical, but the work, M. Loisy says, of the first and greatest Christian mystic.

M. LOISY'S OPINION OF CHRIST.

M. Loisy gleans from his critical examination of the Gospels the views of the "Career of Jesus," summarized as follows:—

Jesus was born of a pious family, about four years before the Christian Era. The terrifying teaching of St. John Baptist had for Him, as well as for many others, a great attraction, and He accepted Baptism at his hands. He attempted also to take his place when John was imprisoned and began by preaching around the Lake of Galilee, where He was compelled by the persistent demands of the crowd to "work miracles." This mission lasted only a few months, but was long enough to enable Him to enrol twelve auxiliaries, who, travelling two and two throughout the villages of Galilee, prepared His coming. Those who flocked to hear Him belonged to the lowest class. The main point in His teaching was the advent of the Kingdom of God—the sudden and speedy coming, or return, of the Messiah. His teaching was not acceptable to the Pharisees or the authorities and their hostility obliged Him to fly to the region

* *Les Évangiles Synoptiques*, p. 119.

north of Galilee. A conference with His disciples at Caesarea Philippi led to a visit to the capital in order to proclaim Him there as the promised Messiah.

As they approached Jerusalem His disciples were afraid at the risks they were running, but Jesus calmed their fears by promising that they should soon be set on twelve thrones judging the twelve tribes of Israel. In His entry into Jerusalem He exhibited His first manifestation of authority by cleansing the Temple courts, an act of violence in which, M. Loisy continues, He was doubtless assisted by His disciples. For some days after He preached daily about the Coming Kingdom, foiling with great dexterity the traps set for Him by the authorities. "But," says Loisy, "the situation could end only in a miracle or a catastrophe, and the catastrophe happened."*

Jesus was arrested after a brief struggle between the satellites of the High Priest and His disciples, and the latter, without waiting to see the end, fled northward to their homes.

When brought before Pilate, Jesus probably answered "Yes" to the question whether He claimed to be a King. "But," adds Loisy, "the Johannine phrase, 'My kingdom is not of this world,' could never have been uttered by the Christ of history." This confession led naturally to His execution. "After which," Loisy continues, "we may imagine that the soldiers detached the body from the cross before evening, and placed it in some common ditch, into which it was customary to throw the remains of the executed. The conditions of burial were such that after the lapse of a few hours it would have been impossible to recognize the Carcase of the Saviour, even if it were sought for."†

The disciples, however, had been too profoundly stirred, Loisy says, to accept defeat. None of them, he asserts, had seen Jesus die, and, although they knew he was dead, they hardly believed it. Besides, they were fellow countrymen, Loisy continues, of those who had asked whether Jesus was not Elijah, or even John Baptist come to live again. What more natural, Loisy asks, than that Peter while fishing one day on the Lake should see the Master? "The impulse once given," Loisy adds, "this belief grew by the very need which it had to strengthen itself." Christ "appeared to the eleven." So it was their faith brought them back to Jerusalem and Christianity was born.

* *Ibid.*, p. 218.

† *Ibid.*, p. 223.

GROUND'S OF THE MODERNIST VIEW.

This is a startlingly novel presentation of the Gospels, and one naturally asks for the grounds upon which it is based.

The attitude of Modernists of the French school to the traditional presentation of Christianity depends on complicated causes, but chief among these is a conviction that an accommodation of the Christian Creeds to the critical views of intelligent men is absolutely essential. Scholarship, they contend, has given us the *real* Gospel—which differs much from the traditional—and enables us to construct afresh the true portrait of the Central Figure. If the Christian religion is to meet the needs of the present age, it must, they urge, be rebuilt upon this new base. They do not deny, but rather maintain, that the Roman Church of to-day is a natural evolution of the *traditional* New Testament. The base it is which is faulty, and the whole structure must be rebuilt. We see at the moment how the process of laying new foundations and making a new structure has fared at the hands of one of the leaders in the Modernist movement.

M. Loisy has given us lately a species of autobiography under the title of *Choses Passées*, that is, we may roughly translate it, "*Things Outlived*." He had ministered at the altar of his Church until November, 1906, and even then, when the authorities had prohibited him from saying Mass, all he could say was that "This act had not lost for me all religious significance." He had given up, as he tells us, not only the faith of his childhood, but he no longer accepted any article of the Creed in any ordinary sense, unless the clause "Suffered under Pontius Pilate." With this small residuum of the traditional creed he had still, before his excommunication, strange to say, faith in Christianity, that is, his concept of it, as a tremendous force in the world; and even towards the end of his ecclesiastical career consented to a proposal made to Rome by the Prince of Monaco, that he should be appointed Bishop of Monte Carlo. In 1908 he was excommunicated. Was it any wonder?

TYRRELL'S VIEWS.

It was not long before the Modernist movement had found representatives in this country. Among these the late Father George Tyrrell stood out pre-eminent.

Tyrrell was born of Protestant parents at Dublin, in 1861. He has given us a short autobiography which has been admirably

supplemented by the Hon. Miss Petre in the *Life* published by her shortly after Tyrrell's death. In 1878 Tyrrell matriculated at Trinity College, Dublin, and began about the same time to attend surreptitiously Mass at Roman churches. In the following year he came to London, where he became less and less attached to Anglicanism and was at length received into the Roman Communion, but, as he says, "Personal relation of the whole matter to God was then, as now, very weakly conceived and felt."

He entered the noviciate of the Society of Jesus in 1880, and from that time until his dismissal in 1906 his critical and somewhat irritable mind was almost in continuous conflict with the principles of the Order.

TYRRELL ON SCHOLASTICISM.

He was captivated at first with Scholasticism, or rather with its great exponent, St. Thomas Aquinas, but he came finally to see that "the realism it defends plays," as he says, "into the hands of idealism." Yet, he adds, "it is perhaps not a more gross thought-system than that which Christ had to use as the vehicle of His revelation." Scholasticism was, at any rate, the *only* philosophy of the Roman Church: "it was, in fact," as he says, "Catholic philosophy by which our religion must stand or fall," and "every other system is, therefore, non-Catholic and heretical."

He saw that it is "necessarily the most coherent of all systems: every possible objection had been raised, and an answer found for it in accordance with the general underlying assumptions. To question or criticize these last," he says, "is to put one's self out of the pale of intelligence, and even of civility: as Kant and the critical school have done." And he gradually put himself outside this pale.

Scholasticism, while borrowing much from Aristotle, was a reaction against the view that the intellectual side of our nature was not *individual* but of a *universal* character. The "unity of the intellect" theory was regarded as a kind of Pantheism. It was, in the view of Aquinas, an illegitimate deduction from the philosophy of Aristotle. The active intellect could not be regarded rightly as a manifestation of a universal mind—as an attribute of a Cosmic Being or Existence. In the eyes of the Schoolmen such a doctrine would destroy individual personality and the root of morality.

THOMAS AQUINAS.

Thomas Aquinas was born in 1227, and died in 1274. Following his master, Albertus Magnus, he adapted Aristotle to a complete scheme of Christian theology—with the following result: God makes known His will to men in two ways, by Reason and Revelation. These are not in antagonism, but support each other. Revelation consists of Scripture and Tradition; the latter is gathered from the teaching of the Fathers, the decisions of General Councils, etc. Reason is not the reason of any one person, but that of which the working is exhibited by the great philosophic minds of the past, Plato, Aristotle, etc. And just as it was necessary, in order to get a rational view of the universe, to trace back the successive contributions to it of the great thinkers of the past, so was it needful to work back to Scripture through the commentaries of its celebrated exponents. Aquinas began with his immediate great predecessors, and traced back the chain of teaching through them, and through the Fathers of the Church, to Scripture itself. His connected commentaries of the Fathers on the Gospels, based on this method, came afterwards to be called the *Catena Aurea*, or “Golden Chain.”

The philosophy of Aristotle, with the Arab commentaries upon it, all in a Latin version, furnished Aquinas with his outlook on the Universe. He himself wrote commentaries on several of the works of Aristotle; and, thus equipped, he began his great work, the *Summa Theologiae*, or “Sum of Theology,” which he did not live quite to finish. That work is divided into three great sections, treating respectively of God, Man, and the God-Man. He thought, with Aristotle, that the existence of God could be proved by Reason, but he departed from his master in believing that the world was *created* and not *eternal*; and also as to the soul, which he regarded as created by God when a body was ready for it.

Like Aristotle, he regarded the world we perceive as *given* to our intelligence, and looked upon man from the point of view of the end to be accomplished. In dealing with the latter section of his subject, he discusses all the ethical, psychological, and theological questions which naturally arise. But the greater part is taken up with ethics. He distinguishes between the theological virtues—Faith, Hope, and Charity—which are *revealed*, and the natural virtues, which are founded on Reason. Faith, it is to be noted, means, with Aquinas,

belief in a proposition under the direction of the will acting on reasonable proof, and not trust in a Person.

The third section of the *Summa* centres the Christian religion on the Incarnation, whence all grace flows, through the Church and its Sacraments, for the redemption of the world. God became man that men might become partakers of the Divine nature. Aquinas did not live to finish this section, but it was completed later by other hands.

"Till about the date of my first essay," writes Tyrrell (*Life*, ii, 164), "I had not a firm faith, but a firm hope in the sufficiency of the philosophy of St. Thomas studied in a critical and liberal spirit." His hope was not realized, and he began to cast about for other means to bring about his reconciliation of the Church with what he considered the demands of modern thought. Newman's *Essay on the Development of Christian Doctrine* (London, 1845) seemed to Tyrrell at first to offer a means of solving his difficulties.

THE THEORY OF DEVELOPMENT.

The doctrine of development was not new in theology. Even as far back as the *Commonitorium* of Vincentius Lerinensis (434 A.D.), it had been advanced as illustrating how what was implicit in doctrine might come to be explicit.*

Newman applied the theory of development some years before the issue of Darwin's *Origin of Species* to explain how the original "Deposit of the Faith" could be called the same as that held by the Roman Church to-day.

* St. Vincentius writes: "But someone will say, perhaps, 'Is there, then, to be no religious progress in Christ's Church?' Progress, certainly, and that the greatest. For who is he so jealous of men and so odious to God who would attempt to forbid it? But progress, mind you, of such sort that it is a true advance, and not a change, in the Faith. For progress implies a growth within the thing itself, while change turns one thing into another. Consequently, the understanding, knowledge, and wisdom of each and all—of each Churchman and of the whole Church—ought to grow and progress greatly and eagerly through the course of ages and centuries, provided that the advance be within its own lines, in the same sphere of doctrine, the same feeling, the same sentiment.

"The growth of religion in the soul should resemble the growth of the body, which, though it develops and unfolds in the course of years, yet remains the same. . . .

"In like manner it is proper that the doctrines of the Christian Religion should follow these laws of progress, so as to be consolidated by the course of years, amplified by time, refined by age, and yet remain

Newman describes (*Doctrine of Development*, p. 37) what he means by development. "This process is called the development of an idea, being the germination, growth, and perfection of some living, that is influential, truth, or apparent truth, in the minds of men during a sufficient period, and it has this necessary characteristic—that, since its province is the busy scene of human life, it cannot develop at all except either by destroying, or modifying and incorporating with itself, existing modes of thinking and acting. Its development, then, is not like a mathematical theorem worked out on paper, in which each successive advance is a pure evolution from a foregoing, but it is carried through individuals and bodies of men; it employs their minds as instruments, and depends upon them while it uses them.

"It grows where it incorporates; and its purity consists not in isolation, but in its continuity and sovereignty." "It is," he continues, and here he uses Darwinian language before Darwin, "the warfare of ideas, striving for the mastery. . . . It is elevated by trial and struggles into perfection. . . . Here below to live is to change, and to be perfect is to have changed often."

One would have thought there was ample scope here for Father Tyrrell's reforming instincts, but he found at length the

uncorrupted and unimpaired, full and perfect in all the measurements of its parts, and in all its proper members and senses (so to speak), admitting no further change or loss of distinctive characteristics, allowing no variation of boundary. . . .

"For it is right that the ancient doctrines or heavenly philosophy should, as time goes on, be carefully tended, smoothed, polished; it is not right for them to be changed, maimed, mutilated. They may gain in evidence, light, distinctness, but they must not lose their completeness, integrity, characteristic property.

"If once a licence of impious fraud be permitted, I should shudder to say how great will be the risk of Religion being destroyed and wiped out. For if any part of the Catholic Doctrine be laid aside, then another part, and also another, and likewise another, and yet another, will go as a matter of course and right. But when the parts one by one have been rejected, what else will follow in the end but that the whole be equally rejected?

"Again, moreover, if what is new begin to be mingled with the old, foreign with domestic, profane with sacred, this custom will creep in everywhere, until the Church at last will have nothing untampered with, nothing unimpaired, nothing complete, nothing pure, but there will only be a brothel of impious, shameless error, where formerly was a sanctuary of chaste and undefiled Truth. May the Divine Pity turn aside this wickedness from the minds of His own; be it rather the frenzy of the ungodly!"—Dr. Bindley's Translation of the *Commonitorium*.

view defective. "Personally," he says (*Life*, ii, p. 209), "I do not think his [Newman's] effort to unite the conception of development with the Catholic conception of tradition was successful or coherent . . . with his acceptance of the Roman Catholic idea of the *Depositum Fidei*, as being a divinely communicated 'Credo,' or theological summary—no synthesis with evolutionary philosophy was possible. I have only gradually come to realize this: so that I was formerly more of a New-manite than I am now." And yet he felt bound to add, "It was the *fiction* of an unchanged and unchangeable nucleus of sacred tradition that saved the Christianity of the Apostles from being quickly transformed out of all recognition" (*Life*, ii, p. 218).

All hope of a reformation by the application of development gradually died in him. Liberal Catholicism demanded not a *reformation*, but a revolution. Like Christianity on Judaism, Liberal Catholicism would have to be a graft on and not a growth from the existing Church (*ibid.*, p. 289). The deposit of the Faith was like the Ptolemaic astronomy, Tyrrell contended; it could not be *developed* into the Copernican.

He seems at length to have taken refuge in a kind of Mysticism divorced from dogma, and to have trusted to Pragmatism to propagate it. "Such is the truth of religion, namely," he says, "its *utility* for eternal life, *i.e.*, for the life of correspondence with the Absolute" (*ibid.*, p. 178).

"From the continual and endless variations of belief and devotion which originate in one way or other, the Spirit of holiness eventually selects and assimilates the good and useful, and throws away the worthless or mischievous by the slow logic of spiritual life and experience" (*ibid.*, p. 180).

TYRRELL AND PRAGMATISM.

Here we come face to face with Pragmatism pure and simple: the non-survival of the unfit. What is Pragmatism? In the *Popular Science Monthly* for January, 1878, Mr. C. S. Pierce invented the name to designate a rough-and-ready test of the truth or "value" of anything. His friend, Professor Wm. James, took up the name and developed Pierce's views, thus giving a wide currency to them. Pragmatism is practically an attempted answer to Pilate's scoffing question, "What is truth?" Intellectualism, according to Professor James, could not give a satisfactory answer, and yet an accessible solution of the question was continuously needed.

A thing that is true *works*. Empiricism—that is, a philosophy based on practical experience—is decisive in settling what is true or the reverse. Truth depends on application. What cannot be applied can have no *meaning*—that is the principle of Pragmatism. “It matters not to the Empiricist,” Professor James says, “from what quarter an hypothesis may come to him; he may have acquired it by fair means or foul; passion may have whispered or accident suggested it; if the total drift of thinking continues to confirm it, that is what he (the Empiricist) means by its being true” (*The Will to Believe*, p. 27). Truth, consequently, demands verification, and verification means successful emergence from the ordeal of experience. Initial certainty may, therefore, be dispensed with in our reasonings if they afterwards receive the support of continuous verification. So-called “necessary truths” are to be measured by what they lead to. It would be difficult, if not impossible, to apply the Pragmatical principle to science. The mathematics, for instance, of Conic Sections remained *valueless* for many hundreds of years before Kepler found a *value* for them, and changed our outlook on the Solar System. Pragmatism seemed to Tyrrell, however, to meet the case of religious traditions. Verification by survival from the ordeal of experience—both past and future—capacity to be assimilated and corroborated in the process, distinguishes for him true ideas from false. This is practically the position taken up by Ritschl and his school, according to which the justification of Christianity proceeds from spiritual experience and from that alone.

But human experience, one might object, varies with the type of mind in which it originates, and in all mental experience *material* interests predominate. Materialistic conceptions of things, it may be contended, must always, as they have done, shut eye and ear to all experience of the spirit world. But all the while—

“Die Geisterwelt ist nicht Verschllossen,
Dein Sinn ist zu, dein Herz ist todt.”—

Goethe's *Faust*.

In Tyrrell's last book, *Christianity at the Cross Roads*, published after his death, he gives us a depressing picture of the Christ of the Gospels regarded from “the results of criticism.”

THE CHRIST OF CRITICISM—TYRRELL'S VIEW.

Christ is here presented as believing Himself to be the "Son of Man," "the Messiah," the Centre of His own apocalyptic teaching. His mission was to warn His fellow-countrymen of the end of the dispensation as being close at hand. His moral teaching, he considers, with Schweitzer and against Liberal Protestantism, as an insignificant feature—subordinate altogether to the coming cataclysm—after which ethics would be superseded. Christ's ethical teaching was, moreover, he contends, not His own—"there is nothing original in the righteousness preached by Jesus" (p. 51). Tyrrell interprets even the Lord's Prayer as having its chief bearing on the celestial cataclysm and its sequel (p. 54). "Pessimism is the verdict of experience. Whether in himself or in the world: if a man has ideals for both, he is bound to find not only failure, but an iron law of inevitable failure" (pp. 117, 118). Christ had no hopes of an amelioration of the lot of humanity on earth. His Gospel was to be good news to those who despaired of the world (p. 119). He supposed Himself to be the Central Figure in a tremendous cataclysm—which never occurred.

TYRRELL'S SYMBOLISM.

Although he adopts the "Apocalyptic Jesus" of Schweitzer, Christ's eschatological teaching, he says, "was not the Creation of His Spirit: He found it at hand" (p. 102). It was our "duty, however, to abandon the Apocalyptic form and retain what it stands for" (p. 102). "The idea of Jesus remains symbolic," and "the only remedy lies in a frank admission of the principle of Symbolism." "What each age has to do is to interpret the Apocalyptic Symbolism into terms of its own Symbolism." "When we realize," he says (p. 111), "how purely symbolic even our best and most fruitful scientific hypotheses must be . . . we can see that revelation involves no violation of the usual processes of thought, *nor calls for any special faculty.*" Here we see at one and the same time how "human" revelation has become to him, and how protean and elusive also has Symbolism. For symbols have to be interpreted into new symbols by each passing age.

From the foregoing summary of the views of Loisy and Tyrrell we can form some kind of idea of the impassable chasm between Modernism and the Roman Church. No possible

bridge could be thrown across it, and no resource was left to the Roman authorities but to condemn Modernism, root and branch.

THE ENCYCLICAL PASCENDI.

The Papal Encyclical (*Pascendi*) condemning "Modernism" is a closely reasoned document. According to it the basis of Modernism is the philosophy of Kant which limits human knowledge to phenomena, and excludes the absolute from our cognition. The centre and sum of the Kantian philosophy is comprised in the following statement: "We can know only phenomena, not things in themselves, that is, Nature independent of an observer. For our knowledge must be in part determined by the constitution of our cognitive faculties, and we can never know what things are out of relation to those faculties."

This view, according to the Encyclical, excludes natural theology, which attempts to deduce the existence and source of the attributes of God from *external* evidence. God cannot be reached, the Modernists contend, by any *reasoning* process, but only in what they call "vital immanence," which is to be sought for in human experience, that is to say, in a pervasive feeling of need of the Divine, which implies the existence of its object.

This feeling, according to the Modernists, takes its rise in the *subconscious self*, from which it emerges into actual consciousness only when circumstances bring the Unknowable impressively before the mind. It is in this "vital immanence," the Modernists assert, and not in anything external, that *Revelation* takes place. If this revelation is associated with any phenomena of nature, or with human personality, it can only, the Modernist says, be so at the expense of distorting it, and hence arises the necessity of the historian and critic to restore it to its true character. This process constitutes the foundation of historical criticism. The Person of Christ, for instance, has been thus distorted from the real form in which It appeared on earth, by ascribing to It miraculous powers, but science and historical criticism, the Modernists contend, show that there cannot have been anything in the historical Christ which was not purely human. "Whatever, therefore," says the Encyclical, "savours of the Divine must, according to the Modernists, be 'eliminated from His history.'"

All religion, continues the Encyclical's exposition of Modernism, "is only a development of this religious sentiment

(or consciousness)." It is "the cause of all the things which have ever been, or ever will be, in any religion." This sentiment, being "vague at the best," needs illumination. In it "God indeed presents Himself to man: but so darkly and confusedly that He may scarcely, or not at all, be recognized by the believer." It has consequently to be made clear. "This is the office," the Encyclical proceeds, "of the intellect, whose function it is to think and analyze," and to form into concepts the "vital phenomena" as they take rise, and to express them in words. "Hence the maxim common among Modernists that a religious-minded man should *think* his faith," that is, "the intellect must work upon it as the painter brightens the faded impression on his canvas to make the figures stand out more clearly."

The secondary formulas, thus acquired, become *dogmas*, which, the Modernists say, "are intermediate between the believer and his faith." In regard to the latter they are "mere symbols;" in "regard to the believer they are mere instruments."

Dogmas must, they contend, be merely tentative and subject to frequent changes, and thus must exclude anything of a *fixed* character. In the process of "thinking his faith" the religious mind cannot "suffer a dualism to exist in him, and the believer feels within him an impelling need to harmonize faith with science." "This is to be achieved by subjecting the former to the latter." The Modernist makes theology to be an adjustment of the religious sentiment with the intellectual demands of science, which latter being progressive demands a continuous harmonizing. The principle of *immanence*, according to which the *religious sentiment* is the final judge of what is true in the plane of religion, effects the reconciliation with Science by introducing *Symbolism*. This symbolism is tentative and is subject to continuous *restatement*.

The *law of immanence* rejects the idea of the historical Christ having done anything involving superhuman authority. The Sacraments were not instituted by Him, but developed later from the felt need of giving to religion some sensible manifestation. They are mere "symbols and signs," having no other kind of efficacy than historical phrases, "which, having had the good fortune to impress minds, have proved to be powerful instruments for propagating certain great and impressive ideas."

The Holy Scriptures are to the Modernist a "collection of experiences, not indeed of those that may come to anybody, but of those choice and extraordinary experiences which may have

happened in any religion." They are not communicated from any external authority, but come from "God speaking from within through the impulse of *vital immanence* and *permanence*."

The Church does not owe its existence to the immediate institution of Jesus Christ, but is "the product of the *collective conscience* (or consciousness)."

According to this New Theology, "in a living religion everything is subject to change—according to the law of evolution—dogma, Church, sacred books, faith itself—the changes being brought about, not by the accretion of new and purely adventitious forms from without, but by an increasing penetration of the religious sentiment into the conscience" under the stimulus of new needs.

MODERNISM IN OTHER COMMUNIONS.

The Modernist movement is not confined to the Roman Church: indeed its principles had originally been derived from non-Catholic communions. Traditional Christianity has had to encounter rationalizing systems for ages. The feature which distinguishes Modernism from previous rationalistic movements is its intense conviction that religion has a divine foundation and that it is essential to human progress. But the religion to which Modernism gives its support is something absolutely different from traditional Christianity. Modernists of all communions agree that it is necessary to establish a harmony between the Christianity which has come down to them and the knowledge which they have acquired from other sources. Knowledge increases day by day, and there arises a natural question in every thoughtful Christian mind as to how this knowledge will fall in with the religious system which had previously become part of his mental life. Such minds feel it to be a kind of dishonesty to maintain a belief in traditional Christianity without taking into account what, on the face of it, seems logically inconsistent with received views, and yet is generally regarded as the assured results of human research. Intellectual demands, they feel, must have full satisfaction, even at the expense of religious exigencies, and they are quite prepared to jettison from the ship of the Church all that intellectualism regards as a danger to safe navigation.

Canon Streeter, for instance, in his Introduction to *Foundations*, lays down this principle: "The world," he says, "is calling for religion, but it cannot accept a religion if its theology is out of harmony with science, philosophy, and scholarship. Religion

if it is to dominate life, must satisfy both the head and the heart—a thing which neither obscurantism nor rationalism can do. At such a time it seems most necessary that those who believe that Christianity is no mere picturesque survival of a romantic past, but a real religion with a real message for the present and the future, should set themselves to a careful re-examination, and, if need be, restatement of the foundation of their belief in the light of the knowledge and thought of the day."

Canon Streeter's position seems at first sight to be a sound one. The mind cannot for long contain a dualism of irreconcilables within it, and the new light obtained from incontestable knowledge must have a bearing on all previously acquired views.

We have come, therefore, to the real points at issue between "Modernists" and those who adhere to the traditional faith. The establishment of the validity of the knowledge of the day must necessarily be the first task to be taken in hand by the Modernists. Canon Streeter limits the field of investigation to the areas respectively of science, philosophy, and scholarship, and with the established result of that investigation Christian theology has to be brought into harmony.

We have, in the first place, to set traditional Christianity at one with modern science. But here we need to discriminate. Kirchhoff said, and many scientific men agree with him, "There is only one science—mechanics." If we were to accept this dictum, there would seem to be no room for any accommodation between science and Christian theology, if that theology claims to meet *intellectual* demands. Christian theology, in such a case, cannot be of any interest to those who accept Kirchhoff's description, and may be ruled out. More than a hundred years ago it was imagined by philosophers that the universe could be explained on mechanical principles only. Laplace even conceived a physicist competent to foretell the progress of Nature for all eternity, if only the masses of matter, their position, and their initial velocity were given.

But there is now a seemingly more stable base for prediction of Nature's future than even the universality of gravitation. Within our own time the great principle of the conservation of energy* has taken form as an undisputed acquisition of

* The theory of the conservation of energy was, like the atomic theory, anticipated by the ancients. Empedocles (500 B.C.) contended, against the hypotheses of absolute generation and decay, that nothing which previously was not could come into being, and that nothing existing could be annihilated. "Actual origination (*φύσις*) is a name void of objective meaning." Ueberweg, *Hist. of Philosophy*, vol. i, p. 61, Eng. Trans.

science. And this is how this principle affects our outlook on the world: "All real process consists in the movement of masses; all motion is caused by motion only, and all change of motion of any body is caused by impact of some other body upon it." And again, "All physical energy becomes kinetic energy, or the momentum of masses, and the law of the conservation of energy asserts that the kinetic energy of the universe is a constant quantity."

This means that every form of physical activity that comes under our notice is an instance of motion caused by other motion only, and the sum total of the energy causing all motion is constant; it cannot be added to or diminished. Every motion taking place in the universe comes, according to this view, under this law.

Here we may well ask—in the interest of the contentions of Canon Streeter, who invokes science to his aid: Does the law of the conservation of energy really cover every form of activity in the universe, reducing such activity to physical movements which may be measured? Is human thought within its compass, including the human will? Thought cannot be weighed or measured. Is thought, is consciousness a factor in the physical movements of the universe? The strict upholders of the mechanical concept of the universe deny that consciousness in any form can influence in the slightest degree the course of physical events. That consciousness should be able to move the smallest particle of matter is a concept, it is contended, that would upset the law of the conservation of energy by making it possible to increase by that which is not physical motion the sum total of the kinetic energy of the universe.

Consciousness, while an attendant phenomenon on certain brain-processes, has, it is contended, no more efficiency in the world of matter than the shadows of a revolving wheel have on the motion of the latter. It is in cerebral changes only—in which consciousness is a kind of by-product—that, according to the mechanistic theory, efficiency lies. It has been proved that the cerebral cortex—the thin surface-layer of grey matter—is the part of the brain immediately concerned with certain mental processes. This cortex has been mapped out into areas, the integrity of which is essential to certain modes of consciousness, including the highest actions of thought. This and other parts of the brain, together with the spinal cord, are the seat of all nervous processes—and these processes, it is contended, are all of the nature of reflex action under varying

physical stimuli. Consciousness, including the will, has no influence, can have no influence, on these processes, and is therefore excluded from any effect on the world around us. The strong natural conviction that we can, by thought and will, exercise a control on our bodies, and, through them, on the external world, is regarded as fundamentally mistaken. All mental action is the mere ineffective transcript of reflex action in the world of matter. Many reflex actions, we know, are unattended by consciousness, and in such cases consciousness seemingly cannot be a factor in the action. There are also instances of reflex action attended by consciousness in which consciousness seems to play no effective part. The assumption that reflex action covers every form of human activity is an extension of the application of a principle, known to be effective in certain cases, to all instances.

And the result of all this—what is it? All human actions are the actions of automata. There is no freedom anywhere. An iron chain of physical causation links act with act. The phantasmagoria of human consciousness all down the ages is nothing but a futile shadow. The world could have gone on as it has done without consciousness at all. All the great thoughts of men, all systems of philosophy, all the wisdom of the world enshrined in books, all human conceptions which have led, according to common belief, to the great engineering triumphs of the world, are but needless transcripts, as far as the processes of physical nature are concerned, of reflex materialistic action.

MIRACLES AND THE MECHANISTIC THEORY.

The English Modernists would find it difficult to bring their theology, or, indeed, any theology into harmony with this view of nature. And yet their attitude towards the supernatural generally can in reality have no other base. "Spirit," "mind," *cannot*, according to the mechanistic theory act upon matter, therefore the miraculous, which implies such action, is excluded from the Modernist's theology. But logically much more than the miraculous is excluded: God, who is assumed to *rule* the universe, must, if He is not to be identified with nature-mechanics, be also excluded from exercising any providence in the world. In St. Augustine's time there were also men who denied the occurrence of miracles, but they still adhered to the belief that God made the world. St. Augustine showed their inconsistency (*De Civ.*

Dei, x, 11): "Those who deny that the invisible God works visible miracles are not to be listened to, since, even according to them, He made the world, which they plainly cannot deny to be visible. Whatever, therefore, is wonderful in the world is naturally of a lesser wonder than the whole world itself, which, without doubt, God created—that is, the heavens and the earth and all that therein is." To exclude God from interference in mundane affairs is to exclude Him also from Creation. In Shakespeare's time also there were impugners of miracles:

Iafeu. "They say, miracles are past; and we have our philosophical persons, to make modern and familiar, things supernatural and causeless. Hence is it, that we make trifles of terrors; ensconcing ourselves into seeming knowledge, when we should submit ourselves to an unknown fear."—*All's Well that Ends Well*, act ii, sc. iii.

The Modernists are not, therefore, modern in their views about miracles. Such philosophical persons as Shakespeare mentions must always be forthcoming, for they will find a public more or less prepared for them. It is no easy matter to believe in miracles. Common everyday experience is against them. The Indian prince, who dismissed as unworthy of credence his informant testifying he had seen solid water, has his representative everywhere. The unfamiliar will always be on its trial, and requires strong evidence to substantiate it.

Hume's argument, that it is more natural that testimony should be false than that the uniformity of nature should be disturbed, seems very natural. But then we must remember that the uniformity of nature rests on testimony, and it comes at length to weighing testimony with testimony. The record of the first comet seen by man must have appeared very incredible to those who had not witnessed it.

The Rev. J. M. Thompson, who takes the Modernist position in regard to miracles, has no qualms in setting aside all evidence in their favour. He is at the same time a firm believer in the Divinity of Jesus Christ. This is his position, in his own words: "Though no miracles accompanied His entry into, or presence on, or departure from, the world; though He did not think, or speak, or act otherwise than as a man; though He yields nothing to historical analysis but human elements; yet, in Jesus Christ, God is incarnate discovered, and worshipped, as God alone can be, by the insight of faith" (*The New Test.*, 1911).

From this we see that Mr. Thompson is not prepared to give up the supernatural altogether. He thinks that science and supernaturalism can survive side by side, but only on the condition that the belief in miracles is rejected. The supernatural with him belongs to the spiritual realm, and no external signs of it are to be looked for. All the signs (*σημεῖα*), wonders (*τέρατα*), powers (*δυνάμεις*), mentioned in the New Testament, are instances of "suggestion," "faith-healing," or misrepresentations of natural events. It would seem, therefore, that Mr. Thompson is prepared, at the demand of the mechanistic theory of the universe, to give up all the New Testament miracles, but yet is not willing to accept its further demand that consciousness (which is the sphere of the spiritual) is nothing more than a by-product of physical activities, a by-product exercising no influence on the world's history.

If he were to admit that consciousness could alter the movement of one molecule of matter, his argument against miracles would fail. For it is on the assumption that external events are linked together by an iron chain of necessity that miracles are excluded from nature. Once admit that consciousness, including will, is operative on the physical world, and miracles stand on quite another footing. Clerk-Maxwell's hypothesis of "sorting demons," and Sir Oliver's "timing" and other movements, do not contravene the theory of the conservation of energy, and yet they may be directive of the course of events.

Sir Oliver Lodge, in his address as President of the British Association in 1913, says: "To explain the psychical in terms of the physical is impossible." "How life exerts guidance over chemical and physical forces" is puzzling, but the fact "admits of no doubt." "The universe is a larger thing than we have any conception of, and no one method of search will exhaust its treasures."

NEW LIGHT ON "LAWS" OF NATURE.

Scientific thinkers are beginning to realize that the universe is something greater than our concept of it. The theory of relativity, which has the support of many eminent men of science, gives us quite another outlook on nature. In the words of Professor Carmichael (*The Theory of Relativity*, New York, 1913): "It is a fresh analysis of the foundations of physical science." It asks the question, "In what respect are our enunciated laws of nature relative to us who investigate

them, and to the earth which serves us as a system of reference? How would they be modified, for instance, by a change in the velocity of the earth?" (p. 8). In discussing this question he shows that according to the theory there is no such thing as simultaneity in events happening at different places. Professor Planck (Berlin Address, October, 1913) is of the same opinion. "The question," he says, "whether two events occurring at different places are simultaneous or not had a positive physical meaning, quite apart from any previous inquiry as to the observer who took the time-measurement. At present the case is quite otherwise." He then proceeds to illustrate this principle.

"That the position of the observer conditions his knowledge is a commonplace. But it has a meaning more profound than this. If we could live, for instance, outside the shadow of the earth, we should never know anything of the starry heavens—of those suns in space, many of which "excel in glory" our own sun. Our solar light *masks* all other lights, and it is within the sphere of probability that what we know may hide rather than reveal a universe greater than our own. Think for a moment of a universe from which night, and the stars it reveals, should be for ever excluded! Think of the limitations of our "Laws of Nature" in consequence!

"Lord Kelvin often asked his audiences to transfer themselves in thought to the centre of the earth, where there would be no evidence of gravitation, nothing would have weight there—water would not flow, nor anything change its position. Think of the consequent limitation of our knowledge on the one hand with the extension of it in some respects on the other!

"If, moreover, we could, departing from the earth, take up a position on any other object in space, our whole experience of things would be altered. 'Our laws of nature' and of its uniformity would be changed by the changed environment." "If everything in the universe," says Sir Oliver Lodge, "had the same temperature, nothing would be visible at all." Moreover, the consciousness in which the laws of nature are presented to us may not, as Plotinus and Professor Bergson agree be limited to the brain, and dependent on the molecular changes of the latter. The body, Plotinus contended, is in the soul and not the soul in the body.

Memory, says Professor Bergson, overflows the brain, and the brain is very probably an instrument of forgetfulness as well as of remembrance. Sir George Darwin, in his British Association Address, put forward the view that something for which he

had not a more appropriate name than memory was concerned in all organic evolution. This mnemonic theory, as it is termed, has been called in to explain heredity by the assumption that the germ-cells are charged with the memories of past generations (see Professor Dendy's *British Association Address*, August, 1914).

BREAKS IN NATURE-PROCESSES.

We are beginning, moreover, to see that Nature does not work continuously, but often by sudden leaps, for which no seeming preparation had been previously made. "Mutations," or sudden leaps, in the organic world are now recognized in cases where a long period of unbroken sameness preceded.

In the physical world also we have evidence of the same thing in Planck's Quantum Theory, which, owing to the fact that it explains several physical anomalies, is becoming generally accepted. It calls in question the *constancy* of Nature's operations. "The constancy of all dynamic operations," says Professor Planck, "has been an unquestioned assumption of all physical theories, which, based on the doctrine of Aristotle, maintains that *Natura non facit saltus*. But even in this ancient fortress recent investigations of physical science have made an important breach. In this case it is the principles of thermo-dynamics with which—owing to newly observed facts, the sentence just cited has come into collision; and if all the indications are not deceptive, the days of the validity of that saying are numbered. Nature, in fact, seems to work by leaps, and those, too, of a singular character." These leaps, he afterwards explains, are of an explosive and inconstant nature. This principle is on a par with the "mutations" already referred to, and the constancy and uniformity of Nature, which, in the eyes of some, seem to exclude the miraculous, are no longer to be regarded as unquestionable acquisitions of knowledge.

The Quantum Theory, moreover, as applied to heat-radiation, is inconsistent with the older mechanics (see *Nature*, January 22nd, 1914). Other considerations have lately thrown grave doubts on the universality of the Newtonian laws. The principles at work in the connection of the "whirl" of negative electrons with the positive nucleus in the atom are seemingly inexplicable by any known mechanical laws.

Dr. Norman Campbell, writing in *Nature* of January 22nd, 1914, raises the question of the universality of application of

mechanical principles. Dealing with the difficulty of accounting for the motion of electrons within the atom, he says: "It has recently been proposed to solve this difficulty by denying that the principles of mechanics are true in their application to systems of atomic dimensions. Such a solution may appear heroic rather than practical to those who have not followed the trend of modern physics; those who have, know that it is completely in accordance with the recent development of our ideas. The new conceptions, which were first introduced by Planck's theory of radiation, and have been applied with such striking results to the theory of specific heat and elasticity, are directly contradictory of those of the older mechanics."

Again, "Bohr's theory not only rejects the principles of mechanics, which the most conservative are being driven to abandon, but it indicates that fundamental propositions are to take their place."

Even the pervasive influence of gravitation has been recently called in question.

Professor Eddington (*Stellar Movements and the Structure of the Universe*, 1914) concludes, from a comparison of the proper motion of the "fixed" stars with their spectra, that the average velocity increases with the age of the star, and he throws out the momentous conjecture that matter in its elementary stage may not be subject to gravitation.

It seems clear from this extract that mechanical principles, applied to the constitution of the atom, are not in undisputed control of the universe, and it is only prudent to wait for further light before we adapt, as the Modernists are doing, our theology to the demands of a mechanical system which may have to give place to a wider generalization not conflicting with the possibility of the miraculous in nature.

Deprived, as the Modernists think they are, of any support for the supernatural from the science which they wrongly assume to be that of to-day, they take refuge in philosophy. The scholastic philosophy is, to them, no longer in harmony with modern thought. We need a new Aquinas, they think, to give us a satisfactory presentation of the Christian religion in a theological terminology of a truly philosophical character. The Modernists found such a philosophy in that of Emmanuel Kant and his followers. The distinction drawn by Kant between "Nature in itself"—which he regarded as unknowable—and the phenomena presented in consciousness, gave the Modernist all that he wanted to build up a religion from inward spiritual experience without reference to external

records. Renan was, perhaps, the first to apply the Kantian philosophy to religion in its historical aspect. "Religion," he says, "is false from the objective point of view, that is to say, in itself, and in regard to that which it commands to be believed; but it is eternally true from the subjective point of view, that is to say, from the need we have of it and of the religious sentiment with which it corresponds." *

Spiritual experience, and not historical events, are to the Modernist the perennial source of all religion. The external element, like "Nature in itself," is presented to consciousness only as symbols of reality. Symbolism occupies, no doubt, a large field in religion. When we speak of God as "Light," as "Truth," as "Love," etc., we are using symbols to express truths beyond the reach of our faculties, but it does not follow that all revelation of matters not within the sphere of experience are merely symbols.

The Bishop of Oxford, Dr. Gore, in an admirable article in the *Constructive Quarterly* for March, 1914, limits the use of symbolism to the expression of truths which deal with "what lies outside our possible or actual human experience," or "concern the transcendent God, or regions of existence which lie in the beyond" (p. 68). "We are now urged," he goes on to say, "by our Modernist friends to extend the application of this principle so as to recognize that the phrases 'He was conceived by the Holy Ghost, born of the Virgin Mary,' and 'He rose again the third day from the dead,' are symbolical phrases." This Dr. Gore denies. "It cannot, with any show of reason, be denied," he goes on to say, "that the point of Christianity was that these things and the like miracles had actually happened; and that provision had been made that they should be proclaimed by competent witnesses. The insistence upon actual occurrence and competent witness in the New Testament is unmistakable" (p. 64). "With regard to the Bible language about angels and devils, it is one thing to recognize the language about the devil 'going about as a roaring lion, seeking whom he may devour,' or about the 'unclean spirit' going through dry places, etc., or about the Angels of little children beholding the face of God in heaven, as symbolical language; but it is quite another thing to dismiss from our minds the whole idea of good

* "La religion est fausse au point de vue de l'objet, c'est à dire en elle-même, et quant à ce qu'elle ordonne à croire; mais elle est éternellement vraie au point de vue du sujet, c'est à dire du besoin que nous en avons et du sentiment religieux auquel elle correspond."—*Patrice*.

and bad spirits, and their relation to us and influence upon us" (p. 57). "Again, the same principle applies to the revelation of what is 'above' and 'below' our present sphere of experience—to heaven and hell" (p. 32).

The Modernist view of symbolism rests, as we have seen, on the Kantian outlook.

It may be well in this connection to consider how that outlook is regarded by the most recent scientific investigators.

Professor Planck, in the Berlin Address (Oct., 1913), already referred to, presents the latest scientific view with regard to the Kantian outlook as contrasted with that of thirty-six years ago.

"Five and thirty years ago," he said, "Hermann von Helmholtz stated in this same place that our perceptions can never give us a picture, but at most merely a symbol, of the external world. For we are altogether lacking in a standard which would serve to show any kind of resemblance between the character peculiar to the external impression and the character peculiar to the consciousness to which it gives rise.

"All conceptions which we may form of the external world are, in the last analysis, reflections merely of our own consciousness. Is there any rational sense at all in setting up opposite our self-consciousness a 'Nature in itself' independent of the latter? Are not rather all the so-called 'laws of Nature' merely at bottom more or less serviceable rules by which we sum up, as accurately and conveniently as we can, the flow of events in our consciousness?

"If this were the case," says Professor Planck, "then not only the ordinary judgments of men, but even exact investigation of Nature would at all times be in a fundamental error. For it is impossible to deny that the entire development of physical science up to the present aims, as a matter of fact, at as wide and deep a 'separation' as possible of the processes of external Nature from those that take place in the world of human consciousness.

"The escape from this entangling difficulty very soon presents itself if we follow for only a step farther the thought-process involved.

"Let us assume for the moment that a physical picture of the world has been found which satisfies all the claims which may be made upon it, and thus is capable of exhibiting perfectly accurately all the empirically discovered laws of Nature. In that case the assertion that the picture referred to resembles only after a fashion 'actual' Nature can in no wise be proved.

"But this subject has also a reverse side, which is generally much too little accentuated. Equally true is it that the still far bolder assertion, namely, that the supposed world-picture represents absolutely truly 'actual' Nature in every point, without exception, is not in any manner to be refuted. For in order even to enter on a proof to the contrary it would be necessary to be able to say something with certainty about 'actual' Nature—but this confessedly is altogether out of the question. Here, as we see, a monstrous void lies before us into which no science may ever penetrate, and the filling up of this void is not the business of the Pure Reason, but of the Practical—the business of a sane view of the world.

"Little as such a view of the world may be susceptible of scientific proof, we may safely rely upon it that it will stand fast against every storm, so long as it remains in agreement with itself and with the facts of experience. But let us not delude ourselves with the idea that it is possible, even in the most exact of all sciences of Nature, to make any progress entirely without a concept of the world, that is, altogether without unprovable hypotheses. Even in Physics the statement is valid, one cannot be saved without Faith—at least, faith in a certain reality outside ourselves."

The German philosophy subsequent to the Kantian proceeds on the assumption that no dualistic concept is necessary to explain consciousness. Consciousness needs no "Nature in itself" as an exciting cause of its activity, *everything* is in the sphere of consciousness. A world outside consciousness is, to some of the successors of Kant, unthinkable.

It is to this philosophy that Canon Streeter appeals in his Preface to *Foundations*, and Mr. W. H. Moberly contributes to this work an article on "God and the Absolute," in which he endeavours to sketch out, on the basis, presumably, of Hegelianism, a philosophy in which the religious difficulties of the day may be met. He does not seem satisfied with his own conclusions, and adds at the end with commendable frankness his misgivings. "We have raised," he says, "a very ambitious problem, and our suggestions towards its solution are, at the best, fragmentary and unsatisfying. The reader can hardly avoid feeling this, for the writer himself feels it strongly." The philosophy which is to form a basis for Modernist theology is, therefore, yet to seek, and if the view cited above as to a world limited to subjective experience is any guide to the trend of scientific thought, the great fabric of Monism, built up with much labour by

successive German thinkers, is already beginning to crumble to pieces.

The last of the triad with which modern Christian theology must be harmonized is "Scholarship." And here it is necessary to make a few preliminary remarks. The "discoveries" of scholars obtain a hearing all the more readily if they traverse prevailing beliefs. Affirmations do not naturally attract as much attention as negations, and the knowledge of this fact is not without its influence on students of theology, whose temporal future may largely depend upon their making their mark in the world. Strauss and Baur found a Victorian public to take interest in their destructive criticisms of the then prevailing Christology. Have these critics made a permanent impression on religious thought? Drews in our own time has found a translator to put into English his myth-theory of Christ, but with no effect. The discussion as to the origins of the Synoptic Gospels, and as to their respective dates, has ended, as Harnack himself admits, in practically establishing the traditional view. So there is not much more to be done by scholarship in this domain.

It is in the reconstruction of the mental environment of our Lord that recent research claims to have made startling discoveries.

Weiss and Schweitzer—strange as it may seem to those who have carefully studied their views—have given "Modernists" their chief material for a reconstruction of the Person of Christ, and of the faith of the Apostolic Church. Even Canon Streeter, in *Foundations*, regards Schweitzer as a factor in modern theology, although he seems to acknowledge that Schweitzer's views are pushed to extremes. "Fresh light," he says, "is always blinding, especially to those who see it first, and new views rarely secure attention except when pushed to extremes. That this is the case with the eschatological school, and especially with Schweitzer, its literary genius, few will deny" (p. 78). Canon Streeter even admits (p. 76) that "Recent researches in the field of what is known as apocalyptic eschatology have shown (those religious hopes and ideas) to have dominated the minds of so many of His (our Lord's) contemporaries" (p. 76). The resuscitation of the Book of Enoch, and of pre-Christian Apocalyptic literature generally, was a God-send for the German critics. Schweitzer, with a naively patronizing air, says, as quoted by Canon Streeter, "As of old Jacob wrestled with the Angel, so German theology wrestles with Jesus of Nazareth, and will not let Him go until He bless it—that is, until He

will consent to serve it, and will suffer Himself to be drawn by the Germanic spirit into the midst of our time and our civilization."

The rediscovered Christ of Schweitzer, "drawn by the Germanic spirit," is to replace the Christ of traditional Christianity! What a demand upon faith! Even supposing that Judaism at the time of our Lord were interpenetrated with the concepts of the Book of Enoch, and of other Apocalyptic literature, in the process of the spiritual evolution of the Church, that is, under the guidance of the Holy Ghost, such concepts must have sloughed off at an early date. The fact that we have to go to Abyssinia, converted to Christianity in the fourth or fifth century, for the only complete MSS. of the Book of Enoch, and that we cannot find in their original languages most of the other Apocalyptic documents in question, is sufficient proof that the views contained within them had ceased to be of interest to the early Church. The evidence, moreover, that these particular views were generally current in our Lord's time is not of a convincing character. There were, as anyone reading Dr. Charles's articles in the *Encyclopædia Biblica* must see, varied eschatological views presented in pre-Christian-Jewish Apocalyptic literature. What reason, then, is there for assuming that Christ culled from a mass of conflicting opinions that form of eschatology, adopted by Schweitzer, and made it the substance of His teaching? There is no indication that the custodians of the Jewish records knew anything in Christ's time about the Schweitzer-view, and no one has as yet, I believe, pointed out any survival of these cataclysmic views in post-Christian-Jewish literature.*

* Canon Charles's articles in the *Encyclopædia Biblica* on Apocalyptic Literature and Eschatology furnish all that is required to enable the reader to come to a sane conclusion on Schweitzer's views. Dr. Charles gives us an analysis of the Apocalyptic literature current in the period shortly before and after our Lord's time. The works dealt with include the *Fourth Book of Esdras* (called the *Second* in the *English Apocrypha*), which is ascribed to 81-96 A.D.; the kindred *Apocalypse of Baruch* (50-100 A.D.); *The Ascension of Isaiah* (50-80 A.D.); *The Book of Jubilees* (72-104 A.D.); *The Ascension of Moses* (4 B.C.-30 A.D.); *Testament of the XII Patriarchs* (from second century B.C.-30 A.D.); *The Psalms of Solomon* (anterior to 64 B.C.); *The Book of Enoch* (the groundwork written before 98 B.C.); *The Sibylline Oracles* (the Jewish portions, iii, 1-62, written before 31 B.C.; ii, 97-817, about 190 B.C., book iv, about 80 A.D.; the Christian portions, iii, 63-92, and ii, 167-170, late Christian; book v is mainly Jewish, written about 80 A.D.; books vi and vii are Gnostic, written about the third century A.D.; book viii is Christian, and belongs to the second and third centuries A.D.; the earlier and later books are

The theory of evolution—a department of science with which modern theology must be harmonized, a principle also implied in the first chapter of the Epistle to the Hebrews—if applied to the growth of Christianity, shows that the only survival in the Church of to-day of anything like Schweitzer's cataclysmal theory is the persistent belief in the Second Advent of our Lord—which can be otherwise explained.

The Apocalyptic elements in the *canonical* books of the Old Testament lend, if they are considered without bias, little or no support for the views that the coming of the Messiah would be attended by an immediate and cataclysmal ending of the age. The "kingdom of heaven," to all competent commentators before the rise of the eschatological school, had its beginnings here on earth and its consummation in the far future. It was identified later with the Church of Christ. St. Augustine's *City of God* is the exposition of this. But the eschatologists have no patience with such a view. The catastrophic end of the age, which our Lord in His ignorance thought to be at hand, that is the only key to the Gospel and to the knowledge of Christ's Person. The Church, according to the eschatologists, has persistently throughout the ages presented a wrong concept of Christ's mission, which was simply to warn all men to withdraw their thoughts from temporal things, and to centre them on the coming cataclysm,—any teaching of incidental morality being merely *interimsethic*.

partly Jewish and partly Christian, and were written in the second and third centuries A.D.).

It is from these Apocalyptic documents and from certain portions of the Old Testament that the Eschatologists have endeavoured to present a new view of the environment of thought and feeling in which our Lord moved when on earth, and a fresh conception of His Person and mission. It will be seen from the dates ascribed to these documents by the critics that most of them belong to the period *after* the destruction of Jerusalem (70 A.D.). Hilgenfeld (*Die jüdische Apokalypitik*, Jena, 1857), who dealt with this subject long before Weiss and Schweitzer, saw (p. 240) that this class of literature arose from the pressure from time to time of the Gentile world upon Judaism.

At various crises in Jewish history Apocryphal writings under the name of some well-known prophet appeared in order to foster hopes for the *ultimate* triumph of Israel, and for future vengeance upon its adversaries. The destruction of Jerusalem was the last of these crises, and *after* it five of the documents mentioned above took their origin. These documents, therefore, could have had nothing to do with our Lord's attitude, or that of the writers of the Synoptic Gospels, in regard to the last things summed up in "the day of the Lord." The Fourth Book of Esdras (11 Esdras in our Apocrypha) is typical of this class. St. Jerome calls it and 1 Esdras *Apocryphorum tertii et quarti somnia*. The Roman

Is it not more than astonishing that intelligent men should give even a cursory attention to such a theory? Yet some of the Modernists regard it as an assured result of *scholarship* and contend that our Christology must be altered accordingly. If students of Palæontology were to present us with a fossil-man of the Pleistocene age—such as that exhumed at Piltdown recently—and tell us that from his cranial structure he surpassed the *Homo sapiens* of to-day, and that Nature had made a vast mistake in not evolving this type instead of that which she had selected, we might, if the proof were strong enough, believe this. If we were asked, however, to regard the condition and environment of the Pleistocene man as the *highest*, and to adapt *our* mode of existence to that environment—if we could discover it—should we give the proposal a moment's consideration? And yet we are virtually asked to set aside consistent tradition, the result of a long process of selection and survival under Divine guidance, for a thing of shreds and patches gathered together by modern experts from an alleged independent study of the original documents, and from a new examination of our Lord's temporal environment. Scholarship, it is contended, has now become strictly scientific, and its results to be depended on as we depend upon those of scientific experts. Would scientific men accept this contention? Science can always submit its conclusions to exacting tests. To what tests are we to submit the modern reconstruction of the Gospel records?

Church excludes these and the Prayer of Manasses from its Canon, but prints them at the end of the Vulgate, "that they should not be lost, as they are cited by some of the Fathers, and occur in some old Bibles, both printed and MS." (Preface). II Esdras is a Jewish work with certain Christian additions, including the first two chapters. Upon these have been based apparently the "Reproaches" used on Good Friday, and from chapter ii an adaptation of the words, *Requiem æternitatis dabit vobis . . . et Lux perpetua lucebit vobis*, used in the Roman Office for the Dead. The work is, therefore, composite, as the Rev. G. H. Box shows in his recent work on the subject, although Dr. Sanday, in his Preface to that work, would regard it as having proceeded from one, and that a Jewish, hand. The work had at one time considerable currency, St. Ambrose, and Gildas the British writer having used it freely. The Eschatological element in it occurs in chaps. ii, 27, 37, and xiii, 32.

The Apocalypse of Baruch is of a similar character, and with *The Ascension of Isaiah*, *The Book of Jubilees*, and the later portions of *The Sibylline Oracles* were written after our Lord's time.

It is to *The Book of Enoch* especially, which has been previously dealt with, that the Eschatologists look. The fragment which has come down to us of *The Ascension of Moses* was written in Hebrew, but contains no reference to a Messiah, if Joshua is not to be regarded as representing Him.

It is a little over a hundred years ago since the Battle of Trafalgar was fought. Experts have from time to time examined log-books, reminiscences of the survivors, letters written immediately after the battle, and yet we see, from a quite recent controversy in *The Times*, that the mode of Nelson's attack is still a matter of question. Are experts of to-day likely to succeed better in dealing with documents, none of them quite contemporaneous, describing events of nineteen hundred years ago? As the world of to-day inherits in its civilization all that was worth preserving of its past, so the Church of Christ of to-day, a living organism, inherits all that under Divine guidance has been worthy of permanence in the deposit of the faith once for all *given* to it, and developed throughout the ages.

Historical scholarship has its uses. It can show the steps, for instance, by which our monarchy, from the reign of King John, became, through Magna Charta, the Bill of Rights, the Act of Settlement, etc., what it is to-day. But could it reimpose by any rational process the political system of King John's time on the nation of to-day? And something like this is the attempt of the eschatologists—to give us, under the sanction of "scholarship," a new Christ and a new Gospel for that which evolution, under Divine selection, has secured for us. The Church of to-day, with its long career of conquest behind it, has in its living energies a prestige and promise with which the substitutes advanced by Modernism could never compete.

There is one great difficulty which the Modernists have never seemingly faced. Supposing for the moment that their

The Testament of the XII Patriarchs sees the eventual triumph of Israel, the Conversion (or destruction) of the Gentiles, and the establishment *on earth* of the Messianic kingdom, in which there will be only one people and one tongue. Then follow the Resurrection and Judgment.

The Psalms of Solomon deal with the triumph of Israel, the return of the ten tribes, a period of prosperity following, ending with vengeance on adversaries.

The documents here briefly described, together with the Biblical passages dealing with the "last things," form the basis of the startling views of the Eschatologists. The chief Biblical passages are here given, that the reader may have before him the whole of the real foundations upon which such a wonderful superstructure is raised.

1 Sam. ii, 10; Ps. xcvi, 13; Isa. ii, 10-22; xiii, 6-13; xxvii, 1, 2; xxx, 33; lxvi, 15-24; Jer. xxx, 7, 24; Dan. vii, 9; Joel ii, 1-17; ii, 18-32; Amos v, 18-20; Zeph. i, 7-14; Mal. iv, 1-6.

Matt. xii, 36; xiii, 40-43; xvi, 27; xxiv, 31 to end; Mark xiii; Luke xvii, 20 to end; Acts i, 7; ii, 11; iii, 20 to end; xvii, 31; Rom. ii, 5-16;

presentation of the Gospel was the original one, how comes it, we may well ask, that it was left to German critics and their followers in this country to discover it in the present century? Traditional Christianity has held the field since the early centuries of our era, and the lines of its evolution can be traced to the present day. The Modernist concept of the Gospel is, as Modernists admit, a quite new departure, and in no sense the product of organic continuity from the beginning of our era.

The attempt of the Modernists to reconstruct the foundations of the Faith and to build a *new* religion upon them, is, indeed, in direct conflict with the principle of evolution which, as all naturalists agree, conditions all progress. Dr. H. Bradley (*Ethical Studies*, p. 173) shows how this principle works, and, incidentally, one may gather how inconsistent with its operations is the Modernist effort to substitute for traditional Christianity an entirely new concept of the Gospel.

“‘Evolution,’ ‘Development,’ ‘Progress,’ all imply,” he says, “something identical throughout, a subject of the evolution, which is one and the same. If what is there at the beginning is not there at the end, and the same as what was there at the beginning, then evolution is a word with no meaning. Something must evolve itself, and that something, which is the end, must also be the beginning. It must be what moves itself to the end, and must be the end which is the ‘because’ of the motion. Evolution must evolve itself to itself, progress

xiv, 10; I Cor. xv; II Cor. v, 10; Phil. i, 14; ii, 10; I Thess. iv, 16 to end; v, 12; II Thess. ii, 1-15; II Tim. iv, 8; Titus ii, 13; Heb. ix, 27; II Pet. iii, 3-18; Jude 14, 15; Apoc. i, 7; iii, 3; xvi, 15; xx, 15 to end.

The value of the pre-Christian Apocalyptic literature on the eschatological question, in the eyes of Jewish writers such as Jost, Graetz, etc., is regarded as nil. The stream of Jewish tradition since the time of Christ offers similar evidence, as does post-Christian Jewish literature, which is purely legalistic.

Canon Charles, however, is of opinion that it helped much in the transition from Judaism to Christianity. He is also of the opinion that “the expectation of the nearness of the end formed a real factor in Jesus’ view of the future,” but he is cautious, in discussing the other side of the question, to add, “There are, on the other hand, many passages which just as clearly present us with a different aspect of the future.” He shows his attitude towards the Weiss theory by dismissing with little ceremony the latter’s contention (in support of his eschatological theory) that there is no conflict between Mark xiii, 32 and xiii, 30.

A reaction against the Weiss-Schweitzer-view is already at work, and the hasty patrons of it in this country must feel more and more that they have damaged, by supporting it, their reputations as unbiassed critics.

itself, go forward to a goal which is 'itself'—development bring out nothing but what was in, and bring it out, not from external compulsion, but *because* it is in it."

Dr. Bradley's view of evolution was meant to show inferentially the absurdity of prevailing concepts. He did not see, perhaps, that it was destined to express the latest opinions of biologists on the subject. In his Presidential Address to the British Association at Melbourne in August, 1914, Professor Bateson seemed inclined to place the potentialities of all evolutionary processes in the primordial protoplasm. "At first," he says, "it may seem rank absurdity to suppose that the primordial form or forms of protoplasm could contain complexity enough to produce the divers types of life. But is it," he asks, "easier to imagine that these powers could have been conveyed by extrinsic additions?" The answer is in the negative if we are to trust the trend of modern research.

Professor Bateson is inclined not only to regard the primordial protoplasm as containing *within it* potentially all the forms which have since proceeded from it, but also, to look upon the process of development as caused, not by extrinsic additions, but by *loss* of certain elements inhibitory of change—"evolution by loss," and not by factors acquired from without, is a new view, but it seems to fall in with much of our present knowledge.

We have learned of late, for instance, that abnormal development in the mental and physiological constitution of human beings are held in check by certain *inhibitory* functions. If these be removed, we have as a result unbridled and irregular products. A parallel to this inhibitory physiological action is to be found sociologically in what we call "self-control." Individuals and nations that lose their "self-control" are a prey to wild revolutionary impulses, even supposing that these impulses are necessary to further developments. That the future should be actually contained in the present is not startling when we think, as Professor Bateson instances, that what became Shakespeare was once a minute speck of protoplasm, and that all additions to that speck were exclusively such material as would go to the building up of an ape or a rat. Christianity had within it at the outset all that it has since displayed to the world. We may safely trust, from the analogy of the organic forces at work in nature, that it will evolve from itself new forces which for the moment may be "masked." That a new and vital Christianity could arise from the labours of destructive German and other critics would require a miracle to make credible.

DISCUSSION.

The Rev. MARTIN ANSTEY rose to propose a hearty vote of thanks to Canon McClure for the masterly review he had given them of a very wide subject. There was only one word in the title of the lecture to which he took exception. For the word "traditional" he would substitute the word "historical" Christianity. The word "traditional" was associated with the Romish view of Christianity as based on Holy Scripture and tradition, whereas in truth it rested on the written Word of God, and was in danger of being corrupted by the traditions of men.

Christianity was one complete, coherent, consistent whole, dominated by one central principle, springing from one supreme Person, and embedded in actual facts of past history. It was not a system of theories or a scheme of thought. Its relation to Holy Scripture was intimate, intrinsic, vital. It involved belief in (1) certain fundamental facts, (2) certain definite interpretations of those facts, and (3) certain duties or laws of conduct enjoined as arising out of the Christian interpretation of the fundamental Christian facts. These facts were contained in the four Gospels, and the Book of Acts. The interpretations were contained in the first part of the Epistles, and the duties in the latter part of the Epistles. The Christian Creeds were not metaphysical theories, but statements of fact. "I believe in Jesus Christ, who was born of the Virgin Mary, suffered under Pontius Pilate, was crucified, dead and buried; the third day He rose again from the dead . . ."—these were the fundamental facts upon which, and not upon any philosophical theory, Christianity was based.

Modernism was an attempt to adapt Christianity to an anti-Christian system of philosophy. In the eighteenth century an attempt was made to adapt Christianity to the prevailing anti-Christian philosophy of Deism. In the nineteenth century a similar attempt was made to adapt it to the prevailing philosophy of Pantheism. Modernism was an attempt to adapt it to the prevailing monistic philosophy of the twentieth century. Modernism did not base its theories upon the facts of history, but endeavoured to adapt the facts to its theories. Hence it rejected the fact of the Virgin Birth, and substituted for the Fall a doctrine of the rise of man. But facts were not to be set aside in this manner. When duly

attested and proved by witnesses at once honest, capable, and contemporary, they could not be overthrown. The witnesses attesting the facts of the Gospels were honest. Paley proved this by showing that they died to attest the truth of their testimony. Hume suggested that, though honest, they may not have been capable. But they were quite competent to attest the truth of the things which they had seen and heard. Hence the endeavour of modern higher critical scholarship to prove that they were not contemporary, and to date the Gospels and the Epistles from the second or third centuries. These attempts had all ended in failure. The testimony of the Apostles to the facts of the Gospels had never been disproved. It was the testimony of honest and capable men as to facts which they had seen with their own eyes, heard with their own ears, and handled with their own hands. And it was confirmed by the perpetual testimony of the Holy Spirit in the hearts of those who believed. The truth of the facts which formed the basis of Christianity could only be overthrown by discrediting the witnesses, and this had never been done. Modernism was not an adaptation of Christianity to the needs of the modern mind, but the substitution for it of another Scheme which was not a modification, but a repudiation, of the Christian Scheme as a whole.

Lt.-Col. MACKINLAY desired heartily to second the vote of thanks to the Lecturer for a most valuable paper.

The Modernist rests his position upon a denial of the historical character of the Gospels. The writings of St. Luke, apart from their inspiration, are now regarded by careful scholars as accurately historical. Not only does he allude to many well-known contemporaneous events, such as the enrolments in the Roman Empire, the pro-consulship of Gallio, etc., but he gives most accurately the exact titles of various Roman officials as proved by recently discovered inscriptions, as well as certain geographical boundaries recognized in his day as demonstrated by Sir W. M. Ramsay. He describes most naturally the effects of the love of money on various persons, and he gives other graphic touches true to human nature. Such writings are not consistent with the inclusion of myth and fable. The orderly historical character of the puzzling central chapters of St. Luke's Gospel is now being demonstrated.

This line of attack on the Modernist position showing the historical accuracy of one of the Gospels has only been employed of late

years, but it is an effective one, and should be still further developed.

The Ven. Archdeacon BERESFORD POTTER had listened to the paper with much pleasure; it was very gratifying that one who, from his official position as Secretary of a Society, might be expected to write more or less "to order," should impress his readers, as did Canon McClure, so strongly with his absolute fairness and desire for the truth.

If we referred back to our Lord's time, we saw how He condemned the Jewish teachers of His day, who had degraded Judaism, and how He sought to recall His hearers to the great spiritual truths underlying Judaism. Is it impossible that Christianity may have suffered some degradation, some lowering of spiritual vitality, during the long centuries of its existence, and that we, like the Jews, may need to be recalled to a more spiritual attitude?

The speaker thought that the Church owed something to the Modernist thinkers, though, in the swing of the pendulum, one might naturally expect that mistakes would arise. We could not accept Loisy's teaching, nor all that Father Tyrrell wrote; yet Tyrrell's view that the test of spiritual truth was its effect in uplifting the spiritual life of man was one with which he entirely agreed. He had lately had the pleasure of a conversation with Mr. Thompson, and was entirely assured as to his religious spirit and fairness of mind; at the same time he could not admit that there was any consistency between his denial of miracle and his strong belief in the Incarnation.

The CHAIRMAN read a note from SIR ROBERT ANDERSON in which he expressed his sense of distress and pain that Canon McClure's paper ended by offering no alternative to Modernism save "traditional Christianity." "Tradition" had supplied the platform from whence rationalism had launched its attacks upon Holy Scripture and on the faith of Christ; our only sure refuge was "God and the Word of His Grace."

The CHAIRMAN remarked that he felt sure Sir Robert had misunderstood Canon McClure's use of the word "traditional." The lecturer was not referring to that which is often termed "Tradition," but to primitive Christianity as contrasted with some recent conceptions. For our knowledge of what Christianity is we must fall back upon the Bible; it stands upon no other rock than

that of Holy Scripture. Many people were unaware how full and complete was the testimony of the early Church to the Bible—to quote the Epistle to the Hebrews, “we also are compassed about with so great a cloud of witnesses.” Traditional Christianity, that is to say Christianity as derived from the mere traditions of men, had done immense harm by preparing the way for “Modernism”; belief had been asked for a vast mass of quite unhistorical events, and these fictions had clouded men’s faith in the great historical facts of the life of Christ. There was only one way by which to escape from these entanglements: let us go back to Holy Scripture.

He greatly admired Canon McClure’s patience in his study of these products of German philosophy. After all, there was nothing specially modern about them: they were simply revivals of ancient Gnosticism, and were unspeakably dreary and monotonous. More than sixty years ago the late Dean Mansel had them exposed, and had shown that the Modernists had not advanced at all beyond their predecessors. All the Modernist arguments and theories were hopelessly deficient in one essential particular: they had no answer to the question, how we may be saved from our sins.

He wished that we could get rid of abstract terms. It was not with Christianity that we were concerned, but with Christ. As long as we fixed our gaze on that Divine Figure, these speculations vanished.

The reason why Modernism had made less progress in this country than on the Continent was no doubt that our people knew the Bible. There was one thing for which this nation was deeply indebted to the English Church. From the Reformation onward, it had been the rule that the Bible should be systematically read aloud in Church in the common tongue every Sunday. The value of this might be learnt from one illustration. Renan, in his *Vie de Jesus*, characterised the discourses of the Lord which are recorded in the fourteenth and three following chapters of St. John’s Gospel as arid and metaphysical. Everyone who had read those chapters with the slightest spiritual apprehension knew that that was simply nonsense. There were no parts of Holy Scripture that were so full of life and comfort to all. We Christians were far too timid; we stood on the defensive and were apologetic, when we should be boldly asserting and insisting upon the greatest facts in

all history. We ought to exalt the Person of Christ ; we ought to proclaim the Words of Christ, and to maintain their paramount claim on the obedience of all men.

The LECTURER briefly acknowledged the vote of thanks, and expressed his obligation to the Rev. M. Anstey for his criticism of the word "traditional" ; by that word he had wished to connote "historical Christianity"—Christianity as based on the great historical facts of our Lord's Birth, Life, Death and Resurrection.

The meeting adjourned at 6.10 P.M.

WRITTEN COMMUNICATION.

The Rev. Chancellor LIAS writes : This war has given the *coup de grâce* to, what I may venture to call, German sceptical criticism. For more than a hundred years, from Eichhorn onwards, we have had a succession of German critics whose aim has been to minimize the credit of Holy Scripture, and to such a height had the tyranny of Germanism in this country grown that an article for a paper would be refused, a book would be received slightly or ignored, if it did not conform to the Germanic fashion. Yet there were those of us who saw that this Germanized criticism was not what it professed to be,—scientific ; it rested upon assertion, not upon facts or first principles. And we foresaw that either a reaction must come or this country cease to be Christian, for the Christian religion could not stand upon such foundations as those that were left to it. What none of us dared to foresee was the appalling object-lesson which this war presents us of a country which has abandoned Christianity and Christ, has not only rejected Jehovah, but gone back to Odin, and has set up a morality worse than any ever seen before, a morality resting avowedly on force alone.

I proceed to a few brief and disconnected remarks on the paper. Newman's theory of development is stated on p. 62 ; whether this development be true or false did not seem to matter in Cardinal Newman's estimation, for he considered that it took place according to men's ideas of "congruity," "desirability," or "decorum" ; it was therefore neither logical nor scientific, and depended entirely on "the taste and fancy" of the developer.

On p. 61, there is a reference to the large-minded and most valuable *Commonitorium* of Vincentius Lerinensis, wherein he lays down that the germ of truth is essential and unchangeable, but its explanation and application are gradual and progressive. The Modernist view mentioned on p. 67 is not altogether wrong; where it fails is that it often tries to evaporate the germ on which faith must rest. Bishop Hampden and Charles Kingsley did a good work when they reminded us that the Christian religion rested on a foundation not of theories, but of facts; facts which can be recognized and assimilated even by children and the most ignorant of adults.

On p. 72, it is curious to note how Mr. Thompson sets aside all the evidence for miracles, but expects men to believe Jesus Christ to be Divine without any external evidence at all. Mr. W. H. Moberly's article on "God and the Absolute" is mentioned on p. 79. In a paper I read before the Institute in February, 1883, I endeavoured to show that the God in Whom Christians believe was neither the "Absolute," nor the "Infinite," nor the "Unconditioned"; these were mere intellectual formulæ, whereas we Christians believe in a Living Being,—no abstract category of the metaphysician, but One Who is all Life, all Truth, all Love.

On pp. 81–85, we have a presentation of Canon Charles's analysis of the dates and contents of the various books of Apocalyptic literature which have come down to us. For the most part, critics do not break up these into infinitesimal fragments, assigned to different dates, in the way in which they break up the Old and New Testaments, so that the Germanizing critics would have us believe that Christianity, which all admit to be the best and purest of all religions, rests upon unauthorized and unsatisfactory accounts of its Founder, clumsily embodied in an extraordinary and inexplicable mosaic. If this were so, it would be the clearest possible proof that the religion resting on such a basis was simply an imposture and delusion. If God came down from heaven to enlighten and to save mankind, we may be sure that He would have taken care that His Message to man would have been properly and accurately transmitted, even as His Church has always believed it to have been.

563RD ORDINARY GENERAL MEETING.

HELD IN COMMITTEE ROOM B, THE CENTRAL HALL,
WESTMINSTER, ON MONDAY, FEBRUARY 1st, 1915,
AT 4.30 P.M.

ARTHUR W. SUTTON, ESQ., J.P., F.L.S., TREASURER,
IN THE CHAIR.

The Minutes of the preceding Meeting were read and confirmed.

The CHAIRMAN, in introducing Prof. Ernest W. MacBride, expressed to him the thanks of all present for his coming to read a paper to them on a subject of such great interest and importance.

THE PRESENT POSITION OF THE THEORY OF ORGANIC EVOLUTION. By Prof. ERNEST W. MACBRIDE, M.A., F.R.S.

I HAVE chosen the subject of the theory of evolution as a theme on which to address you for several reasons; first because of all biological subjects this theory awakens the most general interest on account of its far-reaching implications; second, because I regard it as touching one of the two root problems of biological science, viz., the nature of heredity, and hence it possesses for me a supreme interest; and thirdly, because the theory in the form in which Darwin presented it to the world has been challenged by leading biologists at the present time, and this challenge has raised a very lively controversy in scientific circles which is still going on. Since we have all read the *Origin of Species*, one might assume that all my hearers are familiar with Darwin's position, but perhaps, since it is doubtless a considerable time since any of us have read the celebrated *Origin* with care, it may not be out of place to summarize the position taken up in that famous book.

The mere idea that in some way the forms of animals had changed as time progressed, and that different forms of animals had originated from the same ancestral species, was by no means propounded for the first time by Darwin. As he shows in the *Origin of Species*, such an idea had been put forward repeatedly from the time of Aristotle until the present. The merit of

Darwin's work stands or falls with the validity of the proof which he offers that there are processes *now* in operation which must inevitably lead to just such an evolution as many theorists had postulated. To all such theorists the naturalists then in authority had replied that the evidence available compelled them to assume that specific form was invariable—that like begets like after its kind, and that there was no natural process known which could alter it.

Now Darwin begins by pointing out that these same authoritative naturalists recognized the existence of varieties within the same species, and that all of them agreed that these varieties did not owe their origin to separate acts of creation, but had somehow been produced by the transformation of the parent species of which they were varieties. But if this be admitted, we then discover that it is impossible to draw the line between a species and a variety; that in the case of many species of animals, and more especially of plants, leading authorities are hopelessly at variance as to what are species and what are varieties, and it is rather absurd to imagine that a certain amount of difference between two forms is explicable by natural causes, but that to explain a slightly greater amount of difference direct Divine interference must be postulated.

Darwin then points out that the breeds of animals domesticated by man differ in most remarkable ways from the parent species from which they have been derived: that, to take the case of the pigeon for instance, of which he had made a special study, differences in the number of feathers in the tail, in the length and proportion of the bones of the wings and legs, in the shape of the skull, are all exhibited by these breeds. So different indeed are many of them from the wild rock pigeon, *Columba livia*, that many fanciers would give no credence to the suggestion that they had been derived from that species, but supposed that they must have originated from unknown species or had been produced by the crossing of several distinct species. Darwin points out, however, that among all the known wild species of the genus *Columba*, there is none that shows anything like the enormous tail of the fan-tail, with a number of feathers greater than that found in any bird of even the order to which *Columba* belongs.

We may perhaps make the matter clearer by taking another case which Darwin discusses in that wonderful book read by so few, viz., *The Variation of Animals and Plants under Domestication*, and that is the case of the dog. After examining with the greatest care all the evidence which he could collect as to the

origin of the dog, he arrives at the conclusion that all the domesticated breeds are derived from several wild species, which fall into two main categories, viz., those allied to *Canis lupus*, the northern wolf, and those allied to the jackal, *Canis aureus*. No doubt the blood of these species has been crossed again and again. But, as visitors to the Zoological Gardens can convince themselves, there is nothing in the anatomy of either wolf or jackal which could possibly account for the peculiarities of the Chinese pug, of the dachshund, and of the greyhound.

If then the wide divergence between domesticated breeds is not to be accounted for by their origin from distinct species or by the crossing of different species, to what then is it to be ascribed? Darwin, after a long acquaintance with practical breeders, answers the question thus:—by the mating together of carefully selected specimens which show in the most marked degree the “points” which the breeder desires to emphasize. Darwin says that to select the proper individuals, a lifetime of experience is needed, since the points in which the selected show their superiority over their neighbours are often only visible to the trained eye.

Since all the “points” or characters of animals differ in intensity of development from individual to individual, and since either over-development or under-development seems to be inheritable, by careful selection practised through a number of years almost any amount of deviation from the original type can be achieved.

Darwin next points out that in every species of animal far more young are produced than can possibly survive; indeed, it is obvious on reflection that where the animal population of a district remains the same from decade to decade, on an average only two of the offspring born of a single pair of parents survive to enjoy adult life and to raise offspring themselves. But let any lover of birds reason out the number of nestlings raised by a pair of sparrows, for instance, during their lifetime, and then calculate what a destruction of nestlings must ensue. Under such circumstances, as Darwin points out, the surviving two will be those best fitted to their surroundings—that is those which are best adapted to gain food, withstand cold, and evade their enemies. Under normal circumstances this elimination of all but the most fit, generation after generation, will keep the average of health and strength in the species at a high level, but if the circumstances change, if the climate becomes colder, wetter or warmer, or if a new class of enemies turns up, then the standard of what is fit will change also, and by the survival of a slightly different

type of animal in the course of generations the type will slowly change. If a species spreads over a wide range of country, portions of it will probably experience different conditions, and rather different types will survive in different places, and thus slowly out of one species two new species will be produced. This survival of different types was metaphorically styled by Darwin a selection by Nature and was compared by him to the selection of certain types for mating by the breeder; and hence the term Natural Selection.

The part of the whole theory which creates most difficulties for the theologian is this apparently ruthless waste of young life—the “unfulfilled intention,” as Thomas Hardy calls it, so patent in Nature, and yet whether or not Darwin is right in assuming that by natural selection species are really modified or not, nothing is more absolutely certain than that this waste goes on, and it seems to me that this is the real difficulty to be faced and grappled with in endeavouring to reconcile a religious view of life with the laws of Nature as we know them.

It is obvious that, unless there are inheritable differences between members of the same species, natural selection can do nothing, and it by no means follows that differences that we can *see* are differences that can be inherited. A man may be sickly or stunted owing to illness or want of care during his infancy, and yet that man may become the father of a child absolutely free from defect. Now, according to Darwin, inheritable differences are of two kinds, viz., small intensifications or diminutions in the “points” of an animal requiring a trained eye to detect and appreciate them, and great conspicuous differences which are termed by the breeder “sports.” A familiar instance of a “sport” is the Irish yew, which has its branches turned up so that they simulate a kind of urn. This yew, which is now to be found scattered all over these islands, is known to have originated from a single tree found growing on a mountain in Ireland. There is no doubt that some domestic breeds, as for instance hornless cattle, have been produced by some breeders by the preservation of such “sports,” and the question arises whether something analogous may not take place in Nature. Darwin comes to the conclusion that sports have had little or nothing to do in the building up of natural species, since to modify a population the new type must turn up frequently if it is to constitute a sufficient proportion of the survivors to make its influence felt. Thus, to take an instance quoted by Darwin, suppose that it were advantageous to the crows to increase the length of their beaks, this would be brought about not by the

appearance as a sport of a crow with an enormously long beak, whose offspring would found a new race, but by the preservation of a large number of crows with moderately long beaks in each generation.

It is a matter of history that in about 20 years Darwin's theory won its way to wellnigh world-wide acceptance, and it was then obvious that the next step to be taken in the elucidation of biological law was the determination of the causes and course of variation. To this task Darwin applied himself, and in 1868 brought out his master-work, to which I have already alluded, *The Variation of Animals and Plants under Domestication*. The compilation of this book was really the end of all his labours, of which the *Origin of Species* was merely a preliminary account; an account which the pressure of friends induced him to write before he was ready to place his completed evidence before the world. In his second book he takes up the question of the cause of variation, and after a survey of the whole field he arrives at the tentative conclusion that variations are due to the indirect effect of changes in the conditions of life, that is in the environment. The indirect effect, he says advisedly, because on the one hand it is well known that changes in the environment often produce a direct effect on the body: thus cold stimulates the growth of hair, as may be easily seen in the case of children who run about bare-legged on the shore. Since, however, the only bridge between parent and offspring is the tiny germ-cell, it is obvious that nothing can have an hereditary effect except it affects the germ-cell, and as Darwin did not see how the germ-cell could be affected by a change in the body of the parent so as to give rise to a corresponding change in the body of the offspring, he speaks of an "indirect effect," meaning, I suppose, that the germ-cell is affected but not necessarily in a corresponding manner. Yet, in spite of everything, he admits that there is some evidence that the effects of use in strengthening an organ and of disuse in diminishing it are handed on from one generation to another in some cases. To account for this he puts forward his theory of *pangenesis*. According to this theory, every part of the body produces gemmules, and these gemmules circulate in the fluids of the body and accumulate in the genital organs. If an organ is altered, the gemmules which it casts off will be altered—and these altered gemmules accumulating in the genital cells eventually make their influence felt on the course of heredity. Though this theory has been regarded as wild and fantastic by many subsequent writers, and although Darwin himself regarded it merely as a tentative hypothesis, it seems

to me that there is probably a considerable element of truth in it. My reasons for this will be given later on.

The next considerable advance upon Darwin's position was made by Darwin's brother-in-law, Sir Francis Galton, who invented a means of measuring at the same time the number of variations and their amount. He applied his method to the measurement of variations in man, but it was applied to other animals by Weldon, who was Professor first in University College and afterwards at Oxford. An example will make this plain. Suppose we are desirous of finding how much the breadth of the carapace of a crab varies, and how many broad and how many narrow crabs there are, it is obviously of no use to measure the absolute values of the breadth of the carapaces of various crabs, because crabs vary in size. If, however, we take the length of the crab as a unit and express the breadth of the carapace as a fraction of it, then the value of this fraction is high for broad crabs and low for narrow crabs. If we now determine the value of this fraction, for say 500 crabs, and sort the values into groups, the members of which differ from one another by less than a certain limit, then we have the means of drawing a curve which will show us at once the range of variation and the number of specimens showing any given extent of variation. If we measure along a horizontal line lengths proportional to the values of the fraction, and erect at the point corresponding to each value a perpendicular proportional in length to the number of specimens showing this value, then we get by joining together the summits of these perpendiculars a curve. If we take a great number of specimens the curve becomes more and more symmetrical, proving that there is a certain mean breadth of carapace which the great majority of crabs show, and that as we recede from this value we find fewer and fewer crabs, but that on the whole there are as many with the fraction at a higher value than the mean as there are with the fraction at a lower value than the mean, and that extreme values either above or below the mean are very rare. Exactly such a curve as this is got if we record hits made by shooting at a target—most will fall at a certain distance from the bull's-eye. There will be a very few bull's-eyes and a few outliers. Hence this curve is called the curve of error. There is a school of scientists headed by Prof. Pearson who seem to think that by this method we have penetrated the secrets of variation, that all these variations from the mean are inheritable, and that if natural selection were to favour a greater breadth of carapace than the mean the deviations necessary are present in sufficient numbers, and in any event only very few crabs of any generation survive.

But meanwhile another line of attacking the problem had been developed, and one which led to quite different results. An Augustinian monk named Gregor Mendel had been performing experiments on the crossing of different races of plants even at the time that Darwin was putting the final touches to the *Origin of Species*. He obtained most interesting results, but his work remained unnoticed by his scientific contemporaries; it was not until 1900 that it was rediscovered. Then his experiments were repeated and his results confirmed and extended, and a large school of enthusiastic experimenters into the laws of heredity along the lines mapped out by Mendel has grown up in America and England. A popular idea has arisen that Mendel has in some way refuted Darwin. It is therefore necessary to look closely into what Mendel's results really were, and they can be made quite clear by taking as example the pea plant, on which Mendel's work was chiefly done. Numerous varieties of peas exist; thus, when ripe, dry peas may be yellow or green, round or wrinkled. Now Mendel found that if the pollen from a plant produced from a yellow pea were used to fertilize the ovules of a plant produced from a green pea or *vice versa*, only yellow peas were produced. If these yellow peas were then sown, they produced plants which, when self-fertilized, gave rise to yellow and green peas in the proportion of three yellow to one green.

Now in this cross Mendel termed yellowness the *dominant* character, because it alone appeared in the hybrid or first filial generation; greenness was termed by him the *recessive* character because it disappeared in the first filial generation, but reappeared in the offspring of the hybrid, that is the second filial generation, suffering therefore only a temporary eclipse.

If the green peas which reappear in this generation be sown, they give rise to plants bearing (when self-fertilized) only green peas, and this is true however many generations may be raised from them. Further, some of the yellow peas do the same; but two-thirds of them give rise to plants which, when self-fertilized, produce yellow and green peas in the proportion of three yellow to one green; in other words, they behave like the original hybrid of the first filial generation. Mendel explained his results as follows: When the first hybrid produces ovules and pollen grains, these are of two kinds. One sort of ovule and of pollen grain carries the yellow character, and another sort of ovule and pollen grain carries the green character. These two kinds are produced in equal numbers, and in self-fertilization they may be supposed to be mixed at random. There is therefore one

chance in four that a green ovule will meet a green pollen grain, and one chance in four that a yellow ovule will meet a yellow pollen grain, but there is also one chance in four that either a yellow pollen grain will meet a green ovule, or that a green pollen grain will meet a yellow ovule. These two latter unions produce exactly the same result; the resulting pea *looks* yellow, but is a hybrid which in the next generation will give rise, when self-fertilized, to yellow and green peas. Therefore, out of four peas produced by the first hybrid, one is a pure yellow, one is a pure green, and two are yellow hybrids, which look like the pure yellow, so that the proportion, three yellow to one green, is accounted for.

Now suppose that we cross a plant producing round yellow peas with one which produces green angular peas. The resulting peas are round and yellow. Thus roundness dominates over angularity and yellowness over greenness. But when the plants raised from these peas are self-fertilized, three-fourths of the peas produced are yellow and one-fourth green as before, and three-fourths are round and one-fourth angular; but these two sets of qualities are distributed through the peas independently of each other; that is to say, it is exactly as if one had a bag of billiard balls and one were to select at random three-fourths and paint them black, and if one were then to put the balls back into the bag, shake them up, and again select at random three-fourths and mark them with a red dot. As a consequence some balls would have the black paint and the red dot and some would have neither, and some would have the black paint only and some the red dot only. These balls may be taken to represent the ovules and pollen grains of the hybrid. So amongst our peas produced by the self-fertilization of the hybrid we have not only green and angular and yellow and round peas, but two new varieties make their appearance, viz., yellow and angular and green and round. On an average out of sixteen peas nine (*i.e.*, $\frac{3}{4} \times \frac{3}{4}$) will be yellow and round, one will be green and angular (*i.e.*, $\frac{1}{4} \times \frac{1}{4}$), whilst three will be round and green ($\frac{3}{4} \times \frac{1}{4}$), and three angular and yellow ($\frac{1}{4} \times \frac{3}{4}$). Of these two new varieties, however, only one-third, *i.e.*, one in sixteen of the whole progeny of the original hybrid, will breed true. The two-thirds reveal themselves as hybrid with respect to one character (the dominant one).

These examples illustrate the laws of heredity discovered by Mendel, and little new in principle has been added since. It has, however, been shown that the difference between two races consists in most cases in the presence in one of some

definite character which is wanting in the other. The race characterized by the presence is the dominant one. The best instance of this is the ordinary white mouse. This when crossed with the grey wild mouse yields grey offspring. Now the whiteness or albinism is due to a lack of something in the constitution necessary for the production of colour. Hence whiteness is recessive. Such characters in the offspring are said to be due to "factors" in the germ. The enthusiastic supporters of these views go so far as to deny that any "variations" except those of the marked character due to the presence or absence of a "factor" are inheritable at all. The variations in degree, such as were measured by Galton and Weldon, are termed by them "fluctuations," and are declared to be non-inheritable. Fluctuations are ascribed to differences in the nutrition of various germs, not to differences in their inherent hereditary potentiality. A difference in the hereditary potentiality such as would give rise to a new race is termed a "mutation," and most Mendelians are prepared to admit that such mutations occasionally take place, though how or why they are unable to say. A celebrated Dutch botanist, De Vries, believed that he had discovered a plant (*Oenothera lamarckiana*), the evening primrose, in the act of giving off mutations; but as this plant is of hybrid and American origin, many biologists suspect that perhaps the apparent origin of mutations may be only the segregation out of the characters of the two parent species and the recombination of these in different groupings, just as we have seen that round green peas may be produced by the combination of round yellow and green wrinkled peas.

If, however, it is to be admitted, as few reasonable Mendelians would deny, that our domestic breeds have been derived from wild species by the appearance of inheritable mutations, then it is of great interest to know more about these mutations. It appears that they are nearly all due to the absence of a factor which was present in the original wild species. To give a familiar example: domesticated black, yellow, chocolate, and white mice are known; the wild mouse is of a grey colour technically called *agouti*. Now this agouti when closely examined is found to contain as factors, black, yellow, and chocolate, and of course the wild mouse has in its constitution *chromogen*, the factor which permits the development of colour, which the white mouse entirely lacks. So that the only evolution of which the more extreme Mendelians will admit the evidence is evolution backwards. It has been even hinted that the primordial germ

from which all life was derived may have contained the factors for all the qualities of which a Shakespeare might boast himself, and that these qualities were prevented from exhibiting themselves merely by the presence of inhibiting factors which were gradually dropped as time went on.

There is an extreme left wing of the Mendelians, however, who go further than this, and deny altogether the occurrence of mutations.

De Vries had maintained the view that every natural species consists of several, sometimes of many, "elementary species," *i.e.*, of forms producing germs of different hereditary potentialities, which in nature are continually intercrossing, and so producing much of the variation which is observed in natural species. The effect of mating selected pairs is, according to De Vries, merely to purify gradually the selected stock and finally to arrive at a race consisting of only one elementary species. When this goal has been reached, according to most Mendelians, no further selection will have any effect in changing the character of the stock. The difference between what we may call a natural species and an elementary species, is that, speaking broadly, two natural species either refuse to cross with one another at all, or if they do cross will produce sterile offspring, whilst two elementary species cross freely and produce fertile offspring.

We may now briefly review the situation at which we have arrived, if the position taken up by Mendelians is a sound one. We find then that there are practically an infinite number of elementary species of animals and plants in the world, each with its distinct definite and unalterable hereditary potentiality. Groups of these are capable of crossing with each other and constitute those populations known as species to the naturalists. In this way continually new combinations of characters are produced, from which, however, the characters of the original elementary species are always tending to segregate out. The process resembles exactly the dealing out of hands of cards from a pack, which is being continually reshuffled. Some Mendelians maintain that an infinite number of distinct hereditary potentialities have existed from the beginning of life, and that new forms can only arise and have only arisen by new combinations of these potentialities (Lotsy). Others are willing to admit that mutations, *i.e.*, changes in the hereditary potentiality, may have taken place; but these changes have always consisted in the dropping of a factor, and in thus producing a form which, compared to the original form, may be regarded as a cripple.

In attempting to give a history of life on the earth on these lines we are thus led into a complete cul-de-sac. The continual shuffling of potentialities brought about by the sexual union of two germs we can understand, but how all these separate races arose is left in insoluble mystery.

It is interesting to recount the solution of the difficulty which was offered by Weismann. Weismann had arrived at somewhat similar conclusions to the Mendelians on totally different grounds. His reasoning was as follows: In the case of animals the two germs brought together in sexual union are of different kinds; one of these, the male germ, is very minute, and the other, the female germ or egg, is much larger. Yet the hereditary qualities of the progeny resulting from the union of two varieties is just the same whichever variety supplies the egg. Therefore the two germs so different in appearance must be entirely alike in their hereditary potentialities. Now the portion of the male germ which penetrates the female germ consists entirely of the nucleus, and the conclusion is obvious that the nucleus must be the bearer of the hereditary qualities. But the nucleus is a complex structure; it consists of a firm wall enclosing a clear sap traversed by transparent cords called *linin*, on which are strung a certain number of granules termed *chromatin*, from their power of absorbing and holding staining materials. When the nucleus divides, this chromatin arranges itself in the form of a number of short, thick rods, called *chromosomes*, and each chromosome becomes split longitudinally and the two halves go to the two daughter nuclei. The number of chromosomes produced in each dividing nucleus is the same, and is characteristic of the species of animal to which the nucleus belongs. Since then we find here a substance which Nature takes the greatest pains to divide into precisely equal halves at each division, and since the hereditary substance is somewhere in the nucleus, Weismann jumps to the conclusion that the chromatin is the hereditary substance of which he is in search. Before the germ-cells are ready to unite each germ-cell has only half the normal number of chromosomes. Weismann assumes that the halving can take place in a random manner, and thus he comes to the conclusion that at each sexual union there is a reshuffling of chromosomes, and in this way he accounts for the origin of inheritable variations. Then, of course, he stumbles against the difficulty of accounting for the different inheritable qualities embodied in the different chromosomes. Weismann assumes that these differences began in the simple ancestors of the higher animals and plants, which,

according to the view generally held, consisted of single cells. In such organisms, according to Weismann, it was possible for acquired qualities, "fluctuations," to be inherited, and the action of different environments caused differences in hereditary potentiality, out of which by varied combination the qualities of the higher animals were built up. In resorting to this explanation Weismann virtually gives up his case. There is no ground whatever for the supposition that the simple animals are constitutionally unlike more complex animals, and moreover all the direct evidence which has been brought forward to support the view that fluctuations are non-inheritable, applies with just as much force to unicellular as to multicellular animals; in fact some of the best evidence has been supplied by the study of unicellular animals, and to this evidence we must now apply ourselves.

Whilst in the case of the majority of the higher animals the production of young is impossible without the previous coalescence in sexual union of two germs, which are carried by distinct individuals, yet this is by no means universally the case. There are many cases in animals where both kinds of germs are borne by the same individuals, which are then termed *hermaphrodites*, and in this case the production of young by self-fertilization is possible, and then we need not fear the introduction of extraneous factors. Self-fertilization is possible in the case of the great majority of the higher plants.

In other cases the egg is capable of developing without fertilization, a phenomenon which is known as *parthenogenesis*; in this case also nothing but the hereditary potentiality of one kind of parent need be considered. Lastly, in the lower animals there is no distinction between body and germ-cell, but the mother gives rise to two daughters by dividing in two, and for long periods this kind of reproduction can go on without the intervention of anything that could be called sexual union.

In all three cases we have the opportunity of raising what has been called a "*pure line*" of progeny. For the case of self-fertilization such a line has been investigated by Johannsen in the case of the bean. Johannsen observed that if beans of a certain type were taken, and individual beans sorted according to their weight, a typical curve of error could be obtained, and if the larger beans were selected the average size of their progeny was larger than that of the smaller beans, though not so much larger as it ought to have been in proportion to the size of the parents. This want of proportionate increase was detected by Sir Francis Galton and called by him "regression towards mediocrity."

If, however, we raise a progeny from a single bean produced by the self-fertilization of a single bean plant, then again we find that the progeny sorted by size will give rise to a curve of error. But if we now select the larger beans from this progeny and raise offspring from them, we find that they vary about a mean, which is not the size of their immediate parent, but is a fixed mean, which is the same as that for the progeny of the smaller beans. The variations in size seem therefore to be fluctuations and in no way indicative of a change in hereditary potentiality, and a change in type of such a line by the continual selection of the larger individuals for propagation would seem to be impossible.

The same result has been arrived at by Agar, working on the eggs of the water-flea *Daphnia*, which develop parthenogenetically, and by Jennings, who studied the unicellular animal *Paramecium*, which propagates itself by division.

It would seem, therefore, that this work leads to the conclusion that a very essential part of Darwin's reasoning is unsound, for it would appear that by a continual selection of individuals showing a certain character in greater or less degree—and this is what Darwin postulated—no change in the type can be effected.

Before, however, we resign ourselves to this conclusion, there are several matters which call for grave consideration. In the first place, no one doubts that when two races differing from one another in a sharply marked character are crossed, the progeny will inherit the qualities of the parents according to the laws worked out by Mendel. In broad outline this was known to Darwin, who knew nothing of Mendel or of his work. But it is to be remembered that Mendel expressly excluded from his purview "all qualities of a more or less description," and he never hinted that the laws which he discovered would apply to them. Yet it is precisely these qualities of "more or less" which are important to the comparative anatomist. Allied species and genera differ from one another not so far as can be seen in the presence or absence of a factor, but usually in the greater or less development of homologous organs. These greater or lesser developments stand, in many cases, in obvious relationship to the possessor's functions and habits, and it is this adaptation which Mendel utterly fails to explain. Again, while it is true that cultivated white sweet-peas differ from the wild stock in the absence of a factor which would allow, if present, of the production of the original purple colour, the difference in size of the pod and pea in the cultivated and wild varieties cannot thus be accounted for. It

is easy to point to the fact that the white rabbit, if crossed with the wild rabbit, will give rise to progeny which will behave in a Mendelian manner as regards colour, but the difference in size and weight between the domesticated and wild varieties is not thus got over. Of course, we may, if we will, extend the Mendelian rules to cover differences of more or less, and this has actually been done by some Mendelians. We may say either that a mutation may cause only a slight increase or decrease in some organ, but if we do this we are only repeating in pompous phrase Darwin's statement that differences in size are *sometimes* inherited—or we may suppose that different elementary species are distinguishable from one another by the presence of factors which cause slight differences in the proportions of certain organs, so that by their crossing all intermediate grades can be accounted for. The difficulty about meeting such a facile presupposition as this is to devise means to bring it to a crucial test. If we select bigger individuals from a species and by mating them raise bigger offspring, and claim that this proves an inheritability of differences of "more or less," the Mendelian answers that in this case the difference in degree was due to a mutation because it bred true, and thus we find ourselves reasoning in a circle.

If, then, the blind acceptance of the idea that the principles of Mendel are the final word in the science of heredity leads to the conclusion that the qualities or factors of the germ cells are as unalterable as the chemical elements, let us put this theory to the test of asking whether it explains the known facts of life. In his *Origin of Species* Darwin emphasized the fact that the record of past life on the earth is exceedingly defective, and that all we have of it are bits and scraps. Broadly speaking, that statement still holds good, but since Darwin's time a few excessively lucky finds have been made. We seem to have chanced several times upon the actual locality where a type of animal was evolved. In the Western States of North America there once existed great inland lakes. These lakes, in due course, became filled up with beds of mud and sand, brought down by the rivers which flowed into them. As the lake became shallower these deposits formed swampy meadows at its edges, and when the animals that lived in the neighbourhood came down to drink they were often bogged in these swamps and drowned. Since these lakes existed for millions of years, we have embedded in them a fair sample of the quadrupeds which inhabited the neighbourhood, and in going from the earlier to the later of these beds we notice changes in these animals, for instance we behold

the evolution of the horse out of a mammal having four toes on the fore limb and three on the hinder limb, like the modern tapir. Now in this series we see no evidence of the sudden acquisition or the sudden dropping of a "factor"; rather the change seems to have been due to the increase of certain parts by use and the diminution of other parts by disuse. Again, in the Karoo desert of South Africa there is a series of beds representing an even greater lapse of time, and in these we have the record of the evolution of a mammal out of a reptile. Here again no evidence of mutations in the original sense is seen, but in such important matters as the arrangement of the jaw-bones and ear-bones, wherein the difference between a mammal and a reptile is most marked, evidence of gradual change in size coincident with change in function is seen.

If Mendelism fails to suit the facts of palæontology, still more is it in disaccord with the facts of embryology. It is often tacitly assumed by Mendelians, who work chiefly with mammals and with the higher plants, that the young form is produced with all the characters of the adult. But, of course, in a large number of animals this is not so: the young one begins life as a larva which, in form and habits, is unlike the adult, and which only gradually acquires the form of the adult as it assumes the habits of the adult. Now, it has been found, if we take the case of an aberrant member of a group in which the normal type of adult structure is fairly constant, that the aberrant member when young exhibits a type of structure much more like the normal type than it does when it is adult. This phenomenon is interpreted in this way: the aberrant member of the group is supposed to have taken up a new mode of life and to have had its structure changed in consequence as a reaction to the new mode of life—just as continued exercise makes the leg muscles of the athlete increase in size. This reaction, in course of long generations, is believed to have been fixed in the constitution of the germ, so that eventually it comes about before the new environment has had time to act. A beautiful example of this is given by the life-history of the hermit crab. This crustacean, when adult, protects its abdomen by thrusting it into the empty shell of a whelk or sea-snail, and the abdomen becomes curved in conformity with the curvature of the shell. But when the hermit crab is young, its abdomen is quite straight, like that of other crabs and lobsters. If, now, a young hermit crab be reared to maturity, but be prevented from finding a shell, its abdomen will become curved, although not so much curved as if it had found a shell. We might well ask

Mendelians: If the hermit crab acquired its peculiar abdomen by the loss of the factor for straightness, how is it that the young hermit crab has a straight abdomen?

Such reasoning as this raises at once two objections; first, it may be asked, is there any evidence from experiments that such reactions to environment, in a word, such acquired characteristics, can be inherited? and, secondly, if they can, by what mechanism can this be accomplished? To answer the first objection we may add that such evidence is difficult to obtain, because to produce it demands experiments carried on over a much longer series of years than any Mendelian has as yet attempted. Nevertheless, in a few cases there is some indication of this inheritance of reaction. In the spotted salamander, for instance, it has been found that if the beast be reared on a dark background the spots of yellow diminish in size, and when this has gone on for several generations the young born, even if reared in normal surroundings, have smaller spots than young born of salamanders which have always lived in normal surroundings.

A good many cases of the same kind have been recorded from among plants; and it seems clear that when a plant or animal reacts to new conditions by a change of structure, if the influence of the new conditions continues long enough the change of structure becomes in time hereditary.

As to how the heredity can become affected, we do not, of course, know, but we can make a guess. We are beginning to know a little of the manner in which the complex body of the higher animal is built up out of the germ. We find at first a few *organ-forming substances* dispersed in the protoplasm of the germ. By the action of these the first simple tissues are built up. Then these tissues act on each other by emitting chemicals termed *hormones*. To give an example: if the stalked eye of a shrimp be pulled off, it grows a new one. But if the optic ganglion beneath the eye be removed, then, instead of a new eye, an antenna is produced. The only way to account for this is to assume that under normal circumstances some chemical is emitted by the ganglion which causes the skin above it to mould itself into an eye.

Now, if by a reaction to new conditions the tissues of an animal change, they will emit a new type of hormone into the blood, and these hormones will after a time be built up in the genital cells. When these cells develop the modified hormone will be set free, and will cause the modification of the tissues, even before the new environment has time to act.

If this view as to the manner in which heredity can be altered is correct, not only does the past history of life as exhibited by fossils become clear to us, but an explanation is afforded of the recapitulation of ancestral history given by embryonic and larval development. We can see that species of animals have become modified in the majority of cases through their entry into a new environment. This entry has usually taken place when the animal has reached the adolescent stage of development, and its structure is then modified as a reaction to the new environment. This modification enables it to exist in the new environment. Its life under the old conditions up to the period of migration constitutes the larval stage of its life-history. As time goes on the reaction to the new environment comes quicker and quicker and finally appears before the migration, and the larval stage is correspondingly shortened.

Our final conclusion, therefore, is that the laws discovered by Mendel throw no light whatever on the origin of variations, *i.e.*, changes in hereditary potentiality; they merely show us what will happen if two races already diverse from one another are crossed. But the real problem of biology is the origin of this diversity.

If the line of reasoning outlined above be sound, it will be gathered that the main position of Darwinism is entirely unaffected by recent discoveries. It is probable that Darwin laid too much stress on the parallelism of the differences between parent wild species and domesticated breed, and those between wild species and wild species. We now know that many of the differences in colour, etc., which distinguish breeds from parent species are pathological differences due to the elimination of a Mendelian factor, and are quite distinct from differences in general proportions due to functional reaction which divide wild species.

Still, when we recollect that in domestication a species is protected from danger and relieved from the necessity of violent exertion, one cannot help feeling that increase in bulk which so often characterizes it is due to a functional reaction, especially as it has been a matter of slow acquisition, and has not been acquired at a single bound, as we should expect in the case of a quality due to the presence or absence of a Mendelian factor.

Darwin was most probably mistaken in assuming that the differences in proportion of limbs, etc., which occur between members of the same brood are inheritable. The work of Johannsen and Agar on pure lines seems to show that they are

not. But all experimenters on the subject of pure lines have been at pains to keep the environmental conditions as stable as they can. If differences occur in consequence of a changed environment, and if the changed environment persists long enough, then we get a changed heredity. Natural selection would then weed out those individuals which did not react—in a word, the unadaptable. If the further question be raised as to why some are more adaptable than others, we must frankly confess our ignorance. Explanations of living phenomena consist in comparing one living being with another, and in deducing general rules and characteristics. Attempts to compare the phenomena exhibited by living beings with those exhibited by the non-living have hitherto been unsuccessful. There is a superficial resemblance, of course, but when the comparison is pressed into detail it breaks down. The attempt to explain the activities of the simplest organisms, such as *Amæba*, on purely physical and chemical grounds, which at one time seemed to be on the verge of succeeding, has proved fruitless. *Amæba* reacts to its environment in a simpler way, but on the same general principles as we do ourselves. The teaching of biology seems to be that the condition of progress is expressed in the text "To him that hath shall be given."

DISCUSSION.

The CHAIRMAN, in introducing the Lecturer, said: It is not my province at the present moment to express any opinion on the subject of the paper, but I hope I may have an opportunity of offering a few thoughts at the end of the discussion.

I should like to remind those present that the Professor has not come to argue in favour of any theory of Evolution, but to put before us the opinion held by the scientific world to-day of Darwin's theory of Organic Evolution.

Some may wonder why our Institute has chosen this subject for consideration and discussion, and may consider it a sign of our decadence and falling away to ask for such a paper, but our object is to learn all we can from every possible source, and try to bring all the knowledge we acquire to bear upon Revelation. We should lose much that is helpful if we only followed out our own lines of thought upon any question. As humble believers in the Christ revealed in the Bible, we naturally live in a very small groove compared with the world around us, and our outlook would

become more and more contracted if we did not exchange thoughts with those who approach the problems of Nature from a less defined or restricted point of view. We should also lose opportunities of influencing some who differ from ourselves.

These are, perhaps, the principal reasons why we have asked the Professor to-day, so that our outlook may be widened, and that we may know what the world is thinking. One reason we feel so strongly about the subject of Organic Evolution is, that looking backwards for thirty or forty years, or more, we know that what may briefly be called "Darwinism" has modified the outlook of professing Christians to a very great degree. I do not say it *ought* to have done so, but most certainly it *has*! If we asked 100 thoughtful men to-day, clergymen or laymen, whether they believed that God created man in His Own image, we should not find that they would all express their belief in the same terms that were generally used some years ago.

Our learned Secretary, Mr. Maunder, in his intensely interesting paper on "The First Chapter of Genesis," asked the question, "When God beheld that which He had made, and saw that it was good, does it follow that, could a man have been there to look on, there was anything present that would have been apparent to his sight: anything, that is to say, that he could have recognized as an accomplishment of the command?" Mr. Maunder would suggest that, though God created man in His Own image, it did not follow that if we had been present on the sixth day of Creation, we should have recognized man as existing in the form we know him to-day. I mention this as an instance of the influence which Darwinism has had upon Christian men. Whether that theory of organic evolution which we are accustomed to speak of as "Darwinism" is itself founded upon sufficiently strong evidence as to warrant such a changed attitude is a matter of extreme interest to us all.

At the end of the lecture, the CHAIRMAN rose to propose a very hearty vote of thanks to Professor MacBride for his most able and interesting paper, and pointed out that the Lecturer had repeatedly stated in his paper that Darwinism stood or fell on the answer to this one question, "Is it possible for acquired characters to be passed on from one generation to another?" *i.e.*, "are variations acquired in the life of any animal or plant capable of transmission to a succeeding generation?"

Sir ROBERT ANDERSON, K.C.B. : We must all recognize the great interest attaching to the subject of Professor MacBride's paper ; but practical people will recognize also that its interest is purely academic. For Darwinian Evolution is a mere theory, and a theory, moreover, which is not only unproved, but obviously incapable of proof. At a University College meeting a dozen years ago (1st May, 1903), Lord Kelvin uttered a memorable dictum on this subject. The occasion was one of a series of addresses on "Christian Apologetics." The first was delivered by Dean Wace, when I had the honour of presiding. At this second, an eminent botanist dealt with the Evolution theory in relation to his own sphere of study ; and he demonstrated that while Darwinism was true in the garden, it was not true in the field. In other words, under the pressure of culture life tends to advance, but, in the absence of culture, deterioration is the rule. Lord Kelvin, who followed, touched upon the crucial question of the *origin* of life, and he summed up his argument by declaring that "science positively affirms creative power."

But scientists of a certain type use the hypothesis of Evolution simply as a cloak for their atheism. In marked contrast, both Kelvin and Charles Darwin accepted as a fundamental doctrine that all life must come from life ; both refused to accept the doctrine that the phenomena of life are the results of blind chance. It is indeed more incredible than any miracle yet recorded, that the material, intellectual and spiritual life of man should be derived from the chance collisions of dead particles of dead matter. And the fact that man is a religious being shows that he is God's creature in a sense different from that implied by any theory of material evolution. As A. R. Wallace aptly said, "to call the spiritual nature of man a 'by-product,' is a jest too big for this little world."

Mr. WOODS SMYTH : I should like to congratulate the Victoria Institute on the lecture to which we have just listened. There is a distinction between organisms undergoing the process of evolution and the finished terminal forms of life. In the earlier ages, it may be argued, there were synthetic types of living organisms, that is organisms embracing potentially the forms of animals now widely separated. Thus one creature united the forms of the deer, the camel and the hog, but to-day these three animals are widely differentiated, and no amount of selection, natural or artificial, can make them other than what they are. Do what you will, the hog will still remain a pig. This

suggests that experiments made now with living forms to illustrate the "Doctrine of Evolution" may not be satisfactory; at least, we cannot reverse the processes in their entirety; and since the conditions of life on the earth are not the same now as in ancient eras, even the very lowest forms of life may not be the same now as those in primeval ages. I would suggest that, in the living forms as known to us to-day, all potential factors for anything higher may have gone out of them. Yet Haeckel mentions that a certain species of Triton which breathed by gills only and had never developed lung tissue, did so develop this tissue when the water in the basin in which it was kept began to decline. Thus we have an instance of a gill-breathing water dweller being changed into a lung-breathing land animal, through change of its environment.

The Rev. A. IRVING, D.Sc.: Sir Robert Anderson has referred to a lecture delivered by Professor G. Henslow at University College. I had a son at the College at the time, and took the opportunity of hearing the lecture. Professor Henslow gave us the word "directivity,"—which a few years ago was not to be found in any dictionary. It expresses what Bergson has since taught us, and represents a something behind all vital processes, directing those purposeful activities. It is most important that we should have a clear idea of that "something" behind all phenomena. Bergson has recognized it, and does not hesitate to admit that we have in that something an influence which can only be ascribed to transcendent God. This is expressed by the term "Creative Evolution," and by Lord Kelvin's favourite phrase, "Creative and Directive Power." It is to my mind an expression of the Divine Immanence—the Divine Immanence *in* the universe—making use of the properties of matter to mould them to higher purposes, though the "Directivity of Life." (See Henslow, Trans. V., I., Vol. xlv.)

The last thought that I would suggest is this: when people go so far as to say,—as the Modernists do,—that what we include in the terms "mental" and "spiritual" are mere by-products of the mechanical action of the molecules of the human brain, as in the speculations of Haeckel, and the empirical charlatanism of Loisy, it brings us to the position which has found its *reductio ad absurdum* in the nonsense which has misled the German people, and brought about the present *débâcle*; nonsense against which their own great teacher, Treitschke, warned them some nine years ago. (See Professor J. H.

Morgan's Introduction, pp. 47, 48, *The German War-Book*. London: John Murray, 1915.)

The Rev. M. DAVIDSON asked whether Professor MacBride thought that fortuitous variations were partly due to bisexual reproduction. Weismann himself discovered that two varieties of *Cypris reptans* possessing marked colorations occur in the ponds near Freiburg. Individuals of the dark green variety appeared suddenly in an aquarium which contained the yellow-ochre coloured variety in the year 1887. As these variations occurred in the absence of sexual reproduction, this cannot be the sole cause of variations.

Would it be possible to ascribe fortuitous variations, if not due to bisexual reproduction, to the tendency of the cell to divide unequally, since the probability of the cell dividing equally would be very small, so that cells would tend to become heterogeneous?

Further, do regressive variations play any part in the evolution of species or varieties? He believed that Reid in his works had strongly emphasized that, without regressive variation, all species would rush to destruction. By regressive variation was meant failure to recapitulate ancestral development.

The Rev. J. J. B. COLES felt sure that they were all much obliged to Professor MacBride for having come and put before the Institute a statement, quite up-to-date, of the position of a theory of this importance. They were equally indebted to him for the way in which he presented the statement, and for the scientific honesty and caution which allowed that, on several very difficult points, no true solution had yet been attained.

The real problem of biology was the origin of diversity. That problem was yet unsolved. Might he suggest that in organic beings an element was found that was not automatic. We were not automata ourselves, but had a certain freedom of choice, and the same was the case with animals. To carry the argument further, was not an independent means of organic action found in the lower forms of life? If so, the question was one which called for a fuller investigation than it had yet received, as it ran on the true lines of comparative science. He thought, therefore, that in all organic matter, where we had life and all its mystery, it was better to begin at the very commencement, and to believe that in the primordial germ there was the beginning of that which might lead to some form of variation.

Was it possible to hold the evolutionary theory on scientific grounds and at the same time to hold to that religious faith which was to us so immensely precious? He believed that it was. We needed to be very patient with those who were investigating in this matter, for there was much yet to be learned. He believed that there had not only been progress in the arts and sciences, but there had also been in the Dark Ages a loss of knowledge, the full recovery of which would be very valuable in discussing questions of philosophy, science and religion.

MR. T. B. BISHOP: I feel that we have to thank Professor MacBride for bringing us up to date on the question of evolution, because the war has nearly banished all scientific subjects from our monthly reviews, and I have scarcely seen any criticisms on Professor Bateson's Presidential Address at the British Association's meeting at Melbourne.

I am not sure whether we may not look upon the paper before us as an answer to Professor Bateson's school.

As a layman who is very desirous of more information on the subject of evolution generally, I wonder whether I may ask Professor MacBride a few questions?

On p. 107 it is stated that in some beds in the Karoo Desert of South Africa we have the record of the evolution of a mammal out of a reptile. May I inquire in what book the particulars of this discovery may be found?

(a) On p. 108 the case is mentioned of the spotted salamander, and of some plants. I should like to know whether, in Professor MacBride's opinion, these instances do not entirely upset the chief argument of Weismann's book, that against the inheritance of acquired characters?

(b) On p. 94 the paper refers to processes *now* in operation, which must inevitably, according to Darwin's view, lead to such an evolution as he postulated.

But is there any proof at all that evolution is *now* in progress?

(c) In *The Popular Science Monthly* for June, 1911, there was a paper by Dr. J. Arthur Harris, of the Station for Experimental Evolution at Cold Spring Harbour, New York, describing attempts which had been made by biometric methods, such as those alluded to in the paper on p. 98, to ascertain the intensity of the selective elimination which may occur in nature, and the results were very

uncertain. His conclusion was that upon the application of those methods many supposedly valid biological theories have shrunk to nothing, and he says: "Possibly this may be the fate of the natural-selection theory." I do not know what later evidence there may be.

The last paragraph of the paper refers to the *Amœba*. May I inquire whether any recent researches have shown that the *Amœba*, which is to be found in all parts of the world, ever evolves into an organism of a higher character?

The article "Protozoa," in the *Encyclopædia Britannica*, concludes by saying that the origin of life is veiled in a mist which biological knowledge in its present state is unable to dispel. But if the *Amœba* in past ages evolved into higher organisms, what reason can be given why it should not be doing so now?

On p. 102 mention is made of natural species and elementary species, and I gather that by elementary species is intended what by some authors are called sub-species, or even varieties. But Mr. Erich Wasmann, in his book, *Modern Biology and the Theory of Evolution*, propounds the theory of a distinction between what he calls "systematic species" and "natural species," and he looks upon the natural species as having been originally created, and the systematic species as having, often in many thousands, sprung from them; and in this way he thinks that the theories of creation and descent can easily be reconciled with one another.

In connection with this idea I may call attention to a passage in Professor Bateson's address at Melbourne, in which he said:—

"We should be greatly helped by some indication whether the origin of life has been single or multiple. Modern opinion is perhaps inclining to the multiple theory, but we have no real evidence."

Oskar Hertwig expressed a similar opinion in an address in 1900 on "Biology in the Nineteenth Century" (p. 44):—

"If we would form an hypothesis as to the descent of the present world of living organisms from simple original cells in the earliest times, the polyphyletic hypothesis has certainly much more probability than the monophyletic."

Dr. J. Reinke, of the University of Kiel, says (*Principles of Biology*, 1909, p. 170 (Heilbronn)):—

- (d) "Our first question of the evolution theory is whether, after the cooling of the earth's surface, one, several, or very numerous original cells have appeared on it. . . . We must consider it very improbable that only at one single point in the earth one single cell has appeared; the prospect that it would keep alive and multiply would be of the slightest. But if there were several, say even a dozen, original cells, we could not speak of the blood-relationship of all plants and animals; and if several original cells, why not millions?"

Professor Otto Hamann, of Berlin, in a pamphlet on "The Descent of Man," quotes Oskar Hertwig's opinion in support of his own view (if I understand him aright) that there were as many original atoms (as he calls them) as there are species of animals, but this cannot be what Professor Bateson means when he speaks of a multiple origin of life.

I do not know whether I may mention another paragraph in Professor Bateson's address. He says:—

- "Modern research lends not the smallest encouragement or sanction to the view that gradual evolution occurs by the transformation of masses of individuals, though that fancy has fixed itself on popular imagination."

Now in Dr. Alfred Russel Wallace's *World of Life*, in replying to an objection of Herbert Spencer's that any variation, to be of any use to a species, would require a number of concurrent variations, he says:—

- (e) "The argument is entirely fallacious, because it is founded on the tacit assumption that the number of varying individuals is very small. . . . But all these assumptions are the very reverse of the known facts. The numbers of varying individuals in any dominant species (and it is only these which become modified into new species) is to be counted by millions."

May I ask—are we to conclude that modern research has upset this argument of Dr. Wallace?

As regards Mendelism, the origin of variations has always been shrouded in mystery, but the discoveries of Mendel show that, in certain cases at all events, variation is governed by definite natural

laws. May we not think it very probable that future research may prove that this is so in all cases? Dr. Wallace, in *The World of Life*, does not appear to attach much importance to Mendelism, but the whole argument of that book tends to show how the progress of the organic world throughout the ages has been governed by natural laws, while still these laws have clearly been controlled by purpose and design.

Mr. M. L. ROUSE said: My brother and I, when we were boys, started with a stock of pigeons of six or seven varieties, including Jacobins and Fantails, in a cote where no enemy could reach them, and we saw with disappointment in eight years all the pigeons assume the plain form and slate-blue colour of the wild sorts, with here and there a white or bronzy quill.

A MEMBER: On p. 94 the Lecturer asks why we claim for species a special creation and not for variations, but surely he answers us on p. 102: "Two natural species either refuse to cross, etc."

Again, it has been proved by Mendelian experiments upon beans, that the curve of error is the same for the beans which have started with a single large bean and have gone on to fertilization as the beans raised from a small progenitor. This shows there is a general tendency to a mean size.

On the other hand, it is found very difficult to keep up a special stock of cattle, for instance, or of seed corn, unless you occasionally introduce other races or varieties. I know that was done years ago with short-horned cattle, and of course it is relations which have these common signs or characters.

As regards the problem of the multiplication of animals, and how it is that such a number are born into the world and so few survive, I may say that in Canada and the States sparrows have spread to the town and have multiplied to a far greater extent; but usually they did not increase to that degree, but surely the Creator intended that the larger animals should feed upon them. The fact that one animal preys upon another is a far better way of disposing of them than if the ground was covered with their dead bodies.

The Rev. M. ANSTEY said the meaning of the word "variation" had never been explained. He doubted whether it had any meaning at all. It was a word used by us to cover up the fact of our ignorance. Like the word "chance," it meant nothing. We all knew that there was no such thing as chance. There was no room

for it in a realm of order, in which cause and effect were linked together in indissoluble corollation. Similarly "variation" was a word used to suggest an effect which somehow or other had come into existence without any adequate cause. But such an effect could not be. Consequently there was no such thing as "variation." Hitting the bull's-eye was one thing in respect of which "variation," or failing to hit the bull's-eye, was a word which, if it had any meaning at all, simply meant hitting the target in any one of any number of contradictory directions.

Professor H. LANGHORNE ORCHARD: We are indebted to the author for a most interesting presentation of the present position of the theory of Organic Evolution. But there is an aspect of the case that I should like to urge: we must distinguish between what is proven and what is only hypothesis. If appeal is made to a vivid imagination, a sketch, more or less ingenious, may be drawn of a conceivable evolutionary process. Yet the utmost achievement of that sort of advocacy is to show that, if there be no fact contrary, the thing *might* conceivably have so taken place. But science should not regard such a doubtful possibility as an actuality.

The CHAIRMAN said: I should like to say that, although the existence of a God and of a Creator may be compatible with the acceptance of "Darwinism," I am absolutely convinced in my own mind that the acceptance of what Darwin teaches as to progressive evolution would absolutely compel us to have the Bible written over again. (Several members dissented.) This is my opinion, and I have spent forty years or more in close observation of plant life, and if the progressive development of higher forms from lower forms could be demonstrated as the method or means whereby organic forms of nature have attained their present condition it would, I believe, sooner or later bring everyone of us here to the realization of the fact that this is not what the Bible was intended to say, or does say.

May I mention that some of the speakers, especially the first speaker, seemed to imply that scientific seekers after truth are consciously opposing God's Revelation, and almost seeking to undermine it. I have the greatest sympathy with the man who endeavours to follow the teachings of Pure Science: he is only seeking after Truth, and true science cannot be opposed to God's Truth. Such men as Professor Bateson, the "apostle of Mendelism," Dr. Keeble and others, are absolutely as sincere and honest as

ourselves, in their search for Truth. They are seeking step by step to acquire knowledge from a study of Nature itself, and knowledge so acquired must throw an immense amount of light on Revelation. This is a very different method of study to the acceptance of a "theory" and the endeavour to make Nature fit in with that theory. I particularly wish to point out that the Lecturer has repeatedly told us in his paper, when speaking of "Darwinism," that the theory of Organic Evolution stands or falls on the truth, or untruth, of the assertion that characters acquired through the struggle for existence, or by the change of environment, can be, or are being, passed on. If these acquired characters cannot be transmitted there is no possibility of a progressive development, nor of any evolution of the complex from the simple, or of higher organisms from lower. Unless indeed the original form of living matter, assumed by many to have been so simple and structureless, were endowed with all the potentiality of a wonderful variation no change could have taken place; but it must clearly be borne in mind that such a form of Evolution as this was not Darwin's view, and is not what we know as "Darwinism."

With all due deference to the Professor, I claim that no one is able to produce any evidence to-day in the plant world of characters acquired from without being passed on to succeeding generations. The Professor says that a good many cases have been recorded, but we want the evidence, and it is impossible to find this. Professor Bateson, the President of the British Association for this year, some of whose research work I have been privileged to watch, says in his Presidential Address:

"Every theory of Evolution must be such as to accord with the facts of physics and chemistry, a primary necessity to which our predecessors paid small heed. *For them the unknown was a rich mine of possibilities on which they could freely draw.*" (The italics are mine.) "For us it is rather an impenetrable mountain out of which the truth can be chipped in rare and isolated fragments."

Now Mendelism is not based upon an hypothesis (such as the transmission of acquired characters) as Darwinism is. Professor Bateson knows perfectly well that if the evidence he acquires "chipped in rare and isolated fragments" from the unknown, is substantiated, then Darwinism must go, although it has so long "held the field" in the realm of thought. We can only go step by step in

the acquiring of knowledge, if we are determined to be satisfied with nothing for which Nature does not afford evidence.

On the question of acquired characters, may I read what Professor Bateson says in his book, *Problems of Genetics*, published in 1912?

"Professor G. Klebs, as is well known to students of evolutionary phenomena, has for several years been engaged in investigations relating to the inheritance of acquired characters. In his many publications on the subject the issue has always been represented as more or less uncertain.

"Desiring to know how the matter now stands according to Professor Klebs' present judgment, I wrote to him asking him to favour me with a brief general statement. This he most kindly sent in a letter dated 8th July, 1912.

"As such a statement will be read with the greatest interest by all who are watching the progress of these studies, I obtained permission to publish it as follows:—

(the letter was in German—the translation I have supplied)

‘8th July, 1912.

‘I will willingly answer your amiable question although I cannot answer it as I desired. Your scepticism in the question of the transference of acquired characteristics to descendants is *only too justified*.

‘My experiments with *Veronica* are *not* conclusive (beweisend), since I have not hitherto succeeded in producing a variety to a certain extent constant, with inflorescence having foliage. In regard to my *Sempervivum*, I am of course to-day still of the opinion that the strong artificial alteration of the bloom has had an influence on individual descendants. I have hitherto published nothing on this subject, *the majority of the abnormal double flowers were unfortunately sterile*. I obtained some seedlings from a less altered example, but they have not yet flowered. In this case it may only be a question of the subsequent effects (Nachwirkung) in the first generation, comparable to those cases in which seeds of trees from the high Alps show certain subsequent effects in the plain. *But up to the present there is no certain case known in which the character artificially brought about has been transmitted through several generations under the usual “normal” conditions.*

‘On the other hand, these negative results are not decisive. For

how little serious investigation has really been done in this direction, and doubtless the matter is not so simple.

‘I am experimenting with other plants because I am of the opinion that it might be possible to obtain at least such new varieties corresponding to the garden varieties.

‘But up to now the experiments have unfortunately not succeeded either with myself or anyone else.’” (The italics are mine. A. W. S.)

One word more. As Professor MacBride so clearly states, Mendelism attributes varieties, *not* to inheritance of additional acquired characters, but to *the loss* of some character or characters originally possessed by the plant. Professor Bateson says (speaking as one who had formerly been favourably disposed towards Darwinism): “*We have to reverse our habitual modes of thought.* At first it may seem rank absurdity to suppose that the primordial form or forms of protoplasm could have contained complexity enough to produce the diverse types of life. But is it easier to imagine that these powers could have been conveyed by extrinsic additions?”

Now what does Mendelism in the mind of a Christian student point to, or indicate? Surely that there is the strongest reason possible, from present-day science, for us to maintain that the Bible is correct in teaching that when created forms of life came from the Creator’s hand they did so in their present highly perfected forms and not in the shapeless condition which “Darwinism” implies. I do not say that Mendelians assert this, but that we may find in Mendelism a very strong support for what the ordinary man has always believed to be the teaching of the Bible.

The Mendelian, as such, and the “Darwinian,” as such, starts with the assumption that the complex and highly developed forms of life around us could not, or did not, commence existence as we see them. Nevertheless “Mendelism” may be taken as indirectly confirmative of the Bible record, and not as destructive thereof, because the evidences which it collects from the contemporary processes of Nature all point to the fact that plants possessing organic life have been able to add nothing to that with which they were originally endowed.

Professor MACBRIDE: It is quite impossible for me to reply to all the interesting criticisms made on my paper.

One set of criticisms are of a type which I may call theological, and another, which interests me still more, are genuine scientific criticisms of the points put forward. May I remind the Society that

it was strictly prescribed by Council that I should rigidly put before you the views held by experts and exclude all reference to theology.

I have had a great many questions asked as to whether Weismann's theory that variations could arise by sexual variation could be maintained. This has been entirely exploded.

I have also been asked whether in the process of division of cells an unequal division would give rise to variation. The cell is a secondary thing and of no importance. Take, for example, the egg of the Sea Urchin. It divides into two, and then into four. By artificial means it is possible to separate one quarter and that will develop into a larva of diminished size agreeing in all respects except size with the normal larva of the Sea Urchin—quite perfect, and so one cell can do the work of four.

I have been asked where the account of the evolution of the mammal from a reptile is to be found. Accounts of the wonderful series of intermediate forms between these two groups are being published from time to time in the *Proceedings of the Zoological Society* by two workers, Dr. Watson, of University College, and Dr. Broom.

With regard to Amœba, I was asked, if my views are correct, why it does not evolve now. All naturalists, including Professor Bateson himself, are agreed that there has been evolution. If evolution has taken place the most probable supposition is that it occurred by the spreading of the species into new environment, and in the beginning of things there was plenty of new environment available for simple Protozoa to spread into, but the field is now occupied by the higher forms.

As regards the passing on of acquired characters, Mr. Sutton has handled the variations of plants for many years, and his views are deserving of the highest respect, and I should not have made the statement if several instances had not been brought forward. There is a very interesting article in the *Twentieth Century* by Prince Kropotkin, on the inheritance of acquired variation in plants.

In order to demonstrate this experimentally, a long series of years would be necessary, but all the changes which can be made in our limited time would be very slight.

Lastly, if I had shared the atheistical point of view attributed by the Chairman to some of my colleagues, I should not have taken the trouble to address you. What I have felt for many years very strongly, is that if the good of Christianity is to be experienced

over a wider circle, it will be necessary sooner or later that its terms be restated.

I have been pained by the implication of many of my critics that Christianity seems to be wedded to out-of-date statements. God and science were put into opposition. What does God mean to me? It means all this great driving power behind the phenomena which we here call Nature. If God created man He created everything. One way in which God manifests Himself is this regularity of law.

I do earnestly hope that this Society will try and re-think the questions of religion and express them in modern terms, and they will gain a much wider circle of hearers.

The Meeting adjourned at 6.25 p.m.

FURTHER REPLY BY THE LECTURER.

(a) In reply to Mr. T. B. Bishop, I would say that if the observations which I have mentioned on p. 108 can be repeated and established, they certainly do upset the chief argument of Weismann's book.

(b) It is a fundamental postulate of science that the laws governing Nature are constant and eternal. If evolution occurred long ago, owing to these causes, it must be proceeding now, though slowly.

(c) There is a good deal of evidence that superficial differences between members of the same brood, family or litter, due to accidents of nutrition are not inheritable, as was assumed by many Darwinians, but not by Darwin himself. Darwin said that variations existed that were *sometimes* inheritable. Natural selection does not create differences, it only eliminates the unfit.

(d) As to the quotation from Dr. J. Reinke, I may say that all this is true. But the fundamental similarity in protoplasm, wherever found, suggests unity of origin. Even if different living cells appeared at once, if they arose in consequence of the same processes operating on the same material there would be a similarity of constitution amounting to blood relationship.

(e) In Professor Bateson's opinion, modern research has upset the argument quoted from Dr. A. R. Wallace's *World of Life*, but not, I think, in the mind of the majority of naturalists. We most of us think that the kind of variations with which Dr. Bateson has experimented are not the kind which have played a part in the evolution of natural species.

564TH ORDINARY GENERAL MEETING,
HELD IN COMMITTEE ROOM B, THE CENTRAL HALL,
WESTMINSTER, ON MONDAY, FEBRUARY 15TH, 1915,
AT 4.30 P.M.

MR. DAVID HOWARD, D.L., F.C.S., VICE-PRESIDENT,
TOOK THE CHAIR.

The Minutes of the preceding Meeting were read and confirmed.

The SECRETARY announced the election of Mr. William Doman as an Associate of the Institute.

The CHAIRMAN called upon the SECRETARY to read the following paper in the unavoidable absence of the Author.

*TRACES OF A RELIGIOUS BELIEF
OF PRIMEVAL MAN.*

By the REV. D. GATH WHITLEY.

BEFORE beginning this investigation, I feel it is necessary to define the sense in which I use different terms, and to explain the signification of words and phrases which will often occur in the course of this paper. There is so much loose writing and loose thinking prevalent, owing to the hasty manner of much of the modern writing, that unless clear definitions are laid down at the beginning, nothing but confusion is likely to follow.

Let me say at the very commencement, that by Primeval Man I mean Palæolithic Man who lived in the early Stone Age. I have nothing to do with the men of the Neolithic Period, nor of the ages of Bronze or Iron. With these later archaeological eras I have no concern in the present paper. Next, I must explain the meaning which I attach to the term Palæolithic Age. It was invented by the late Lord Avebury to signify the time when Man used only stone weapons, which were not ground or polished, but only rudely chipped.* This definition

* *Prehistoric Times*, 1st Edition, p. 3.

was felt at once to be good and proper, and has been universally retained. There has been a disposition to place an Eolithic Age before the Palæolithic Period. In this Eolithic Era men used the rudest splinters of stone, which were so rude and unformed that only "the practised eye" of the long-trained archæologist could detect in them any traces of human origin. I reject this so-called Eolithic Age altogether. I have nothing whatever to do with it; I do not believe it ever existed; and numbers of our best geologists and archæologists reject it entirely.

Next, I must explain the *limits* of the Palæolithic Age, or further confusion will ensue. The source of error is found in the constant practice of looking only at the form and fashioning of the stone weapons to decide the limits of the Stone Age. This has led to much confusion and to erroneous statements. The *form* of stone weapons is similar in all ages, and many stone implements from the Drift gravels, the Neolithic barrows and the mounds of the North American Indians, as well as those which lie on the surface of the ground in India, Africa, and Japan (and which may be of any age) are shaped in precisely the same manner, and are chipped in precisely the same way. This has led some geologists to reject the division between the two Stone Ages completely. Sir William Dawson in one of his earlier books was inclined to reject this division,* and some French geologists have followed in his steps. But this is an error. The Palæolithic Age is a distinct era in the history of the Human Race, and it rests on a foundation that can never be shaken. The epoch is to be characterised not so much by *weapons* as by *animals*. Thus the Palæolithic Age in Western Europe was the time when Man lived in that region with the lion, the tiger,† the hyæna, the elephant; the rhinoceros, and the hippopotamus. All these animals became extinct in Western Europe at the close of the Pleistocene Period, and *not a single one* of them is found in this region in later times. If, then, we find the remains of Man associated with these animals in Great Britain, or in the neighbouring countries, *no matter what kind of stone implements occur with them*, we may be quite certain that the men whose bones lie alongside the remains of these animals lived in the Palæolithic Age. There are some writers who speak of the Men of the First Stone Age as Quaternary Men. This is somewhat vague. The Quaternary Period includes every deposit and all human remains from the end of

* *Fossil Men*, p. 218.

† *i.e.*, The *Machairodus*.

the Tertiary Era down to the recent deposits. Thus it also includes the Neolithic Age as well as the Bronze and Iron Ages. Hence the term as applied to the men who lived with the extinct mammalia is unsatisfactory.

The best and simplest course to take is to consider the Palæolithic Age to be synonymous with the Pleistocene Period in geology, and to include in it everything between the close of the Pliocene Era and the beginning of the Neolithic Age. I know no better definition than this, and in this paper I shall consider the terms Palæolithic and Pleistocene as synonymous. Palæolithic Man, therefore, is Pleistocene Man, neither less nor more.

The problem, therefore, which lies before us for investigation is, whether the men of the Pleistocene Era possessed a religion, and if so, what was its character.

Now, it has been emphatically denied that the men of the First Stone Age possessed any religion. M. de Mortillet, the talented French archæologist, has, in one of his works,* written an elaborate section to show that Palæolithic Man had no religion. There are, he maintains, not the slightest traces of any religious feasts, relics, or customs, anywhere to be found in the Palæolithic Age, and he draws a picture of the happiness of the earliest men who were simple admirers of the beauties of nature, and were not disturbed by any of those terrors of imagination which he declares religion is always creating! A whole series of facts and discoveries can now be laid before the student to show how utterly false is this opinion. Even if among the human relics of the Palæolithic Age no material evidences of religious belief could be discovered it does not follow that these earliest men possessed no religion. Every student of anthropology knows perfectly well that many savage races existing at the present day have neither priests, nor temples, nor vestments, nor religious implements, and yet these savages have religions and often elaborate theologies. The extinct Tasmanians are a case in point.† They possessed no temples, no organised priesthood, and no religious ceremonies. Nevertheless they believed in a Supreme God, with minor deities; they practised prayer, and sang religious hymns, and they believed in a future life. Exactly the same may be said of the Australians,

* *Le Préhistorique Antiquité de l'Homme*, pp. 474-476.

† The most elaborate account of the Tasmanians that I know is found in *Hommes Fossiles et Hommes Sauvages*, by M. de Quatrefages, pp. 292-400.

and of the Mincopies of the Andaman Islands.* The case of the Bushmen in South Africa is still more striking.† These diminutive savages were formerly thought to have no religion whatever, because no traces of temples, sanctuaries, or of organised priesthood could be discovered among them. It is now known that these ideas were utterly incorrect. The Bushmen believed in supernatural deities, they prayed to these deities who were often symbolised by various animals, and they believed in a future life. They therefore possessed a religion, although it was an individual matter, and an elaborate hierarchy with temple worship did not exist among them. Natural objects, such as strikingly-formed rocks and trees are often objects of worship, because they are considered to be the abode of the deity. A great sandstone rock, standing alone on the prairies of Manitoba and called the *Roches Percées*, is, by the Indians considered the home of the gods, and offerings are made to it, and prayers said before it.‡ Thus Primitive Man might have worshipped rocks, trees, and animals, and might even have sacrificed to them, and to the lakes and rivers, without leaving a trace of this worship behind him.§ It shows an utter ignorance of the facts of modern anthropology to say that Primitive Man had no religion, merely because we do not find material evidence of it in the Pleistocene caves and gravels.

But the progress of discovery is rapid, and evidence can be now produced from the cavern deposits of the Palæolithic Period, to show that Palæolithic Man not only possessed a religion, but had probably a recognised priesthood. Let me give one striking instance before I pass on:—

The cavern of Brassempouy in the Landes in Southern France,|| has lately been explored by MM. Piette and Laporterie, assisted by members of the *Association Française*. A Palæolithic deposit was discovered in the cavern, and in this deposit were

* See the accounts of Messrs. Man, Temple and Lane Fox, and in particular De Quatrefages in his work *Les Pygmies*, pp. 133–210.

† For accounts of the Bushmen I refer the reader to *The Native Races of South Africa*, by G. W. Stow, pp. 1–232. There is also an excellent account of the Bushmen given by Professor Sollas in his *Ancient Hunters and their Modern Representatives*, pp. 271–306.

‡ See *Fossil Man*, by Sir J. W. Dawson, p. 270, who also gives in the frontispiece of the book a drawing of the rock.

§ In his *Dolmens of Ireland* Mr. W. C. Borlase also gives many instances of rocks being worshipped by the ancient Irish heathens.

|| This cave is in the neighbourhood of Pau.

the bones of the mammoth, the rhinoceros,* the horse, the reindeer, and the hyæna. The Palæolithic age of this deposit is therefore certain. In this deposit, lying by the side of the bones of the extinct animals, were seven small statuettes in ivory, all of which were elaborately carved, but not one was quite perfect, as all were more or less broken. The most important represents a human figure completely clothed, and *kneeling* in the attitude of prayer. The head and shoulders are wanting, but the attitude is unmistakable. The figure is dressed in a long skirt, with a tippet or short cloak—resembling the tippet of a clerical cassock—over the upper part of the body. The upper part of the tippet, which reaches to the waist, is ornamented. The knees are bent, so that the sculpture represents a man kneeling, and the arms are folded upon the breast: the whole attitude of the statuette is therefore that of a man in peaceful prayer and rapt devotion. In the same deposit near this statuette was found a head and neck in ivory, which probably belonged to the former figure. The neck was long, the face calm, the nose prominent, and the countenance strongly Mongolian. The head was covered with a thick cloth wig which hung down in heavy plaited lappets upon the shoulders, and resembled an Egyptian peruke. Here, then, was a man of the Palæolithic Age kneeling in prayer: what better proof could be desired of the existence of religion in the Earliest Stone Age ?†

There are some theorists who maintain that Primeval Man had no religion, because, according to the theory of Evolution, *he ought not to have any!* Religion is—we are told—only possible at a certain stage of civilisation, so that the earliest men *must* have had no religion. If, therefore, we find traces of religious belief amongst the relics left by the earliest men that science reveals to us, either these so-called traces are false, or some still earlier men *must have existed* who had no religion!

This is one of those unhappy statements which we so often meet with in modern scientific discussion. A thing *ought to be* according to the theory of Evolution, therefore *it really did occur*, no matter if no evidence can be produced in its favour, and no matter what amount of facts can be brought forward against it! Imaginary pedigrees are invented, and fictitious

* *i.e.*, the woolly rhinoceros.

† These statuettes are figured and described in *Bulletin de la Société d'Anthropologie de Paris*, No. 9. November–December, 1894.

ancestors are *supposed* to have existed, because, according to the theory, *they ought to have existed!* Such a method is to put darkness for light, and ignorance in the place of knowledge. If our theories are opposed to facts they must be given up. I really feel I ought to apologise for noticing such childishness. In these days of knowledge and progress men are permitted to dream dreams, but they are *not permitted* to call their dreams by the name of science.*

Let me now pass to some of the proofs that the progress of discovery has brought forward to show that Palæolithic Man possessed a religion. First of all I place those facts which are connected with the *Burial of the Dead* during the Earliest Stone Age.

It was not so very long ago that writers such as De Mortillet† maintained that the burial of the dead was a rite absolutely unknown during the Palæolithic Period, and in many elementary works on Primitive Man the same opinion was expressed, apparently with the intention of degrading Primitive Man and making him as near the lower animals as possible. The progress of discovery has shown that this opinion is entirely false, and a whole army of facts can be produced against it. So completely has the tide of opinion turned that so eminent an archaeologist as M. Cartailhac writes a lengthy chapter in one of his recent works‡ on *The Ritual of the Dead* as shown in the burials of the Palæolithic Age. Since the time this chapter was written many further discoveries have been made, the principal of which I shall notice.

Before enumerating them, however, let me say that it is absolutely necessary that we should make ourselves familiar with the forms of burial which now exist among savage nations. To do this we must carefully study the accounts given by travellers themselves. Books of travel are not read in the present day as much as they should be, and popular treatises are often brief and sketchy. It is also desirable that we read the *earliest* travellers' books. Two hundred years ago (or more) travellers were not possessed with theoretical predilections, and did not see savage life through the spectacles of Evolution. In those early times also the savage races retained their primitive

* I refer chiefly to those visionary writers of the school of Haeckel, who are always *inventing* evidence to make the facts of science suit their theories.

† *Le Préhistorique Antiquité de l'Homme*, p. 501.

‡ *La France Préhistorique*, Chap. VI.

customs unaltered, and had not been corrupted by the evil influences of white men, nor had they abandoned their ancient habits through the pressure of European civilisation. A knowledge of the burial customs which are held now, and were held formerly by savage races, is absolutely necessary in discussing this question. Particularly the customs of the North American Indians in former days should be studied. The works of such writers as Catlin, Carver, and Hearne, as well as a host of later writers, are at hand for our assistance, and the *Transactions of the Smithsonian Institute* form a library full of valuable information. Let the student also consult the valuable accounts of the North American Indians given by the Jesuit missionaries in Canada in the seventeenth and eighteenth centuries.

In enumerating those burials of the Palæolithic Age which seem to indicate some kind of religious belief, I shall arrange them in the following manner:—

First, burials in caverns of single or of several bodies (*i.e.*, skeletons now).

Secondly, burials in the open air of single or of many bodies.

Thirdly, burials of many bodies in separate caverns, *i.e.*, ossuaries.

1. *Le Moustier*. The valley of the Vezère in the department in Central France is classic ground for the archæologist, and was thoroughly explored by Messrs. Christy and Lartet fifty years ago, and since that time it has been again and again examined by zealous investigators. Here, in the famous cavern of Le Moustier, a skeleton was found in 1909. It lay on its side, and belonged to a young man. Flint implements lay around, and a flint hatchet was placed close to one hand. Remains of food had also been laid close to the corpse when buried, and smaller implements were arranged beneath the body, around which also lay a number of shells which were evidently ornaments of the deceased. The body had been buried in a grave, which had been sunk in a deposit of the Mousterian era of the Palæolithic Age.

2. *La Chapelle-aux-Saints*. This cave is also in the district of the Dordogne, near Brive, in the Department of La Corrèze, and the animal remains found in it include the horse, bison, reindeer and rhinoceros. A pit had been dug in a Palæolithic deposit in this cavern, in which the body had been placed, and traces of food, and bones which had formed portions of the food, lay around. Nodules of oxide of iron, used as a paint

(a common custom in the Palæolithic Age), were placed close to the side of the corpse. Either the body was painted when it was placed in the grave, or the paint was laid by the side of the corpse so that when the man entered the other world he might paint himself and shine in all his coloured splendour among his disembodied companions. The skull was large and long,* and it contained a brain as large, or even larger, than that of an average European. So far as brains were concerned, the oldest men were no nearer the apes than are the Englishmen of the present day.† The left arm was extended, and a flint hatchet—to be used as a weapon in the other world—was placed close to the left hand.

Three skeletons were found in 1909 and 1910 by M. Peyrony, at Sarlat, and La Ferrassie, in the Dordogne. They were probably buried, and are now in the Paris Museum of Natural History. Flint implements lay by the side of the skeletons.‡

3. *Paviland*. This is the only cave that contains a Palæolithic burial in Great Britain. It was thoroughly explored by Dr. Buckland, who has given a most valuable account of it, as well as pictures and sections of it.§ The cavern opens in the cliff some fifteen miles west of Swansea, and is popularly known as the Goat's Hole. A breccia in it contained bones of the horse, bear, hyæna and elephant, as well as those of animals now living. Some ivory rods lay by a mammoth's tusk, the date of the formation of which is doubtful. Amidst the cave-earth lay a human skeleton, the bones of which were stained red with oxide of iron. A mammoth's skull and bones were found near the human remains, and a number of shells for a necklace, and ivory rods which were evidently ornaments of the deceased, lay close by the human bones. There were also discovered in the cavern the bones of the bear, horse, hyæna, and rhinoceros. The age of this skeleton, which has been called "The Red Lady of Paviland" has been much disputed. There are the remains of a British camp on the hill above, and Dr. Buckland connected the skeleton with this entrenchment.|| Professor Boyd Dawkins, grounding his opinion on the presence of the bones of recent animals such as the sheep and goat in the cave, also thinks that

* *i.e.*, Dolichocephalic.

† Cranial capacity of this skull, 1800 c.c.

‡ *Records of the Past*, Vol. X, Part VI, p. 328.

§ *Reliquiæ Diluviana*, pp. 82–99.

|| *Ibid.*, p. 90.

the skeleton is not of Palæolithic antiquity.* On the other hand Professor Martin Duncan has declared that the skeleton of Paviland is certainly of Palæolithic Age,† and Professor Sollas has recently expressed the same opinion.‡ It is difficult therefore to come to a definite conclusion, but the painting of the corpse is in thorough harmony with the Palæolithic custom. Before an opinion is pronounced I would strongly advise that all should do as I have done and read Dr. Buckland's *own account* of the discovery, and not trust to modern brief summaries.

4. *Mentone*. The caves in the Baoussés-Roussés near Mentone have yielded many skeletons, and they probably contain interments of different ages. I shall only notice one. This was found by M. Riviere in 1872, and has been described by him at length. The skeleton is now in the Museum of the *Jardin des Plantes* in Paris. It lay on its side with the knees bent, and was buried at a depth of twenty feet. Like all the others it was stained red with oxide of iron, flint implements were close by its hand, and a number of shells formed a necklace round its head. Shells also lay round the arms and legs which evidently had formed bracelets: the corpse therefore had been carefully dressed and painted before burial. From the quantity of hair found beneath the skeleton it appears that the body had been laid on or wrapped in a burial robe, which was probably the skin of a bear. Of this warrior of primeval days it may well be said—

No useless coffin enclosed his breast,
Nor in sheet nor in shroud they wound him.
But he lay like a warrior taking his rest,
With his martial cloak around him.

The usual controversy has been carried on as to the antiquity of this skeleton. Its Palæolithic age has been strongly maintained by Mr. Pengelly,§ Sir William Dawson,|| Sir Charles Lyell, and the majority of French archaeologists. On the other hand M. de Mortillet and Professor Boyd Dawkins,¶ consider that the skeleton is of Neolithic Age. The view of the former authorities seems more likely to be correct.

* *Cave-Hunting*, p. 234.

† *The Student*, Vol. IV, p. 252.

‡ *Ancient Hunters and their Modern Representatives*, p. 215.

§ *Trans. Devon Assoc.*, 1873.

|| *Fossil Men*, p. 299.

¶ *Cave Hunting*, p. 258.

5. *Lauverie-Basse, &c.* In the rock-shelter of Lauverie-Basse in the valley of the Vézère in the Dordogne, another ancient skeleton was found by M. Massenat in 1872. The bones and skull were examined by M. Hamy, and a full description of them has been given in the great work of Christy and Lartet.* The skeleton lay on its side with the arms and legs folded upwards. It was adorned around the neck, arms, and legs, with shells which had formed bracelets and necklaces. Flint implements lay around, and also the bones of the reindeer. As this skeleton is admitted by nearly all authorities, even by M. de Mortillet,† to be of Palæolithic antiquity,† it forms a typical case with which we can compare all the other. I need notice no further Palæolithic burials such as those of Duruthy, Raymonden, and Cro-Magnon. They are all of the same character, and present the same details.

Let us now sum up most of the characteristics of the burials, with which these caverns have furnished us.

The body was carefully dressed, covered with ornaments and bracelets, and carefully painted. Weapons were placed in the hand of the corpse, food was also laid by the side, and all arrangements were made for the comfort of the individual when he entered the spirit world. Here we clearly see that a belief in the immortality of the soul was strongly held in the earliest ages of the Human Race. Possibly it was only the great chiefs who were buried in caves with such elaborate funeral ritual. The bodies of the common people may have been disposed of in a simpler manner. Let us now proceed to another kind of burial in the Palæolithic Age.

Burials in Grave-Yards in the open air.

Solutré. We have hitherto been examining only single burials in caverns, and we have now to consider burials in grave-yards in the open air. The chief of these is at Solutré.

Here we have a genuine *Palæolithic village*, which for a long time was the home of Primitive Man, and here were held feasts, funerals, and all the operations of domestic economy.

Near Maçon in Eastern France is the village of Solutré, which is overhung by a towering hill. Beneath this crag lies an uncultivated hillock and barren slope called *Le Clos du Charnier*. The earth here is full of bones of men and animals. At the

* *Reliquiæ Aquitanicæ*, pp. 255-272.

† *Formation de la Nation Française*, pp. 295-297.

surface are burials of recent date, and of Gallo-Roman antiquity. Deeper down are beds of ashes and the remains of ancient hearths and fires. Mingled with these are flint implements of Palæolithic type, many of which are beautifully fashioned. All through the deposit are the bones of the bear, horse, reindeer, lion, wolf, hyæna, and elephant, many of which have been split to extract the marrow, and also burnt, showing that these animals were eaten by the primitive hunters. Most remarkable of all were the remains of the horse. These form an enormous deposit *by themselves*, and it has been estimated that at this spot there are *at least* the remains of 40,000 horses! Human skeletons were buried all through this deposit, and the age of these skeletons has given rise to endless controversy.

At the top of these deposits were skeletons buried in stone cists, or "box-tombs." These are admitted to be of Neolithic or of Gallo-Roman antiquity. But the skeletons which lie deeper down, and are extended on the hearths and fire-places are of greater antiquity. These latter skeletons are found close to the bones of the lion, hyæna, horse, and elephant, and Palæolithic weapons and carvings surround them. In fact there can be no doubt that at Solutré we have the remains of a *Palæolithic village*, and also burials of the earliest Stone Age. This is certain. Here then we have a crucial case of primeval habits and religious rites.

Such a complete and startling revelation of the advanced social and religious state of Palæolithic Man has of course been vehemently opposed by the advocates of the primitive barbarity of Man. But the evidence in favour of the view I have stated is unanswerable. So far as the *lower* skeletons are concerned the *fauna* associated with them is Palæolithic, the *implements* with them are Palæolithic, and the very *carvings* which are laid by these skeletons are Palæolithic also. It is strange also that very little is said in England about Solutré, and it is very difficult to get a thoroughly good account of this wonderful discovery in English. The best account I know is that given by Dr. Southall,* who is an American. But no one ought to enter into the discussion about Solutré who has not read the account given by the *first discoverers*, MM. Arcelin and Ferry.† Short summaries are of no use, and too frequently abstract theories prevent the facts from being properly understood. In

* *The Epoch of the Mammoth*, Chap. VII.

† *International Congress of Prehistoric Archaeology*, 1868, pp. 319-351.

1873 M. l'Abbé Ducrost found at Solutré in the *lowest levels* a perfect skeleton surrounded by a ring of great stones. A Palæolithic weapon lay close to its right hand, and an image of a reindeer in ivory—probably the family Totem—was placed in the grave close by the skeleton. The proof therefore of the Palæolithic Age of the burial is complete. The latest account of the discoveries at Solutré that I have read is by M. Ernest Chantre.* He declares that at least *twelve* of the burials are Palæolithic, and the skulls of these are both dolichocephalic and brachycephalic. The enormous number of the bones of the horse may be explained by considering that they were offered in sacrifice at the funeral feasts held at the death of great chiefs. We know from Herodotus that the Scythians sacrificed many horses at the funeral of a chief, so that these animals might be useful to the deceased in the next world. The Khirghiz Tartars follow the same custom now. Mr. T. W. Atkinson was present at the funeral solemnities of a great Tartar chief, at which one hundred horses, and one thousand sheep were sacrificed in honour of the deceased;† and in the Caucasus M. Meyendorff assisted at the funeral feasts of the Tartars in which from two hundred to three hundred horses were sacrificed.‡ Clearly, therefore, the Palæolithic burials at Solutré prove that the men of the earliest Stone Age believed in the immortality of the soul, and held funeral feasts to give the deceased his passport to another world.

Ossuaries.

By this term I understand the burials of *many skeletons* in one cavern. In the Neolithic Age we find many such cases especially in France and Belgium. The caverns of Baumes-Chaudres are the chief of these in France§ where three hundred skeletons were buried in disorder. We have now to describe such burials in the Palæolithic Period.

Frontal. This celebrated burial place, which is a cavern on the banks of the River Lesse in Belgium was discovered by M. Dupont in 1864 and 1865, and has been described by him

* *L'Homme Quaternaire dans le Bassin du Rhone*, 1901, pp. 143–155.

† *Travels in the Region of the Amoor*, pp. 63–65.

‡ See Southall's *Age of the Mammoth*, p. 112.

§ M. Cartailhac describes these burials in *La France Préhistorique*, pp. 149, 150.

at length.* The inner extremity of the cavern had been closed by a large slab of limestone, thus forming a small sepulchral chamber. In this cavity lay the remains of sixteen skeletons in great disorder. With the bones were found the fragments of an urn of coarse pottery which had been hung from the roof of the cave, and which had evidently contained food for the dead. Various ornaments and colours for paints lay around, and outside were the remains of fires and the bones of animals which had been eaten at funeral feasts. The whole of these human and animal relics were overlaid by an immense deposit of Palæolithic yellow clay, which had entered the cave and had been deposited after the bodies had been buried in the cavern. Here, then, was a perfect cast of the burial of the dead in Palæolithic times.

Such a complete instance of burial during the Palæolithic Age, with a belief in a future life, has of course been strongly denied. Professor Boyd Dawkins† and Mr. James Geikie‡ consider that the burial place in the cave of Frontal is of Neolithic Age, and they are followed in this opinion by M. de Mortillet,§ and by M. Fraipont in a valuable work which was not long ago published|| But these talented writers are in error, and they do not seem to have read Dupont's own account of his discovery, nor to have seen Dupont's sections and diagrams. It is now perfectly well known that the yellow clay which overlay the human skeletons in the caves is a genuine Palæolithic deposit which is found in many caves and valleys in this part of Belgium. It is also known now that this yellow clay was deposited *after* the burials in the cavern, so that the Palæolithic Age of the interments in the cave of Frontal cannot be denied. The presence of the fragments of an urn made of coarse pottery has been thought to show that the skeletons in this cavern are of Neolithic Age, because it has been maintained that Palæolithic Man was ignorant of pottery.¶ This is now known to be

* Dupont's account of the discovery of this cavern is found in his *Étude sur l'Ethnographie de l'Homme de l'Age du Renne*, and in his *Étude sur les Cavernes des bords de la Lesse et de la Meuse, explorées jusqu'au mois d'Octobre, 1865*.

† *Cave Hunting*, p. 238.

‡ *Prehistoric Europe*, p. 110.

§ *Le Préhistorique Antiquité de l'Homme*, p. 472.

|| *Les Cavernes et leurs habitants*, pp. 230, 231.

¶ This opinion has been held by M. de Mortillet in *Le Préhistorique Antiquité de l'Homme*, p. 558. Also by Lord Avebury, *Journal of the Anthropological Institute*, 1872, p. 383, and by others.

an error, since numerous discoveries of Palæolithic pottery have taken place in France, Belgium, and Germany. MM. Fraipont and Tihon have found pottery in undoubted Palæolithic deposits in the caves of Engis, Spy, and Petit Modave in Belgium, and they have proved by an unanswerable series of geological arguments that this pottery is certainly Palæolithic.* The list of Palæolithic pottery is continually increasing, and it is necessary to be acquainted with the *latest discoveries*, and not to pin one's faith to abstract theories. If anyone is still inclined to dispute the Palæolithic Age of the burial place in the cave of Frontal, I can only say in reply—"Have you read Dupont's account of the discovery of this burial place—as I have read it? If you have not done so, I do not think you are qualified to give an opinion on this question."†

Before proceeding to another branch of the subject, I may now sum up the evidence to be derived from the burial customs of the earliest men, as to the existence of Religious Beliefs among the men of the Palæolithic Age.

The placing of food and weapons close to the deceased shows that the dead man was supposed to be living in another world, and that those who buried him believed in a future life. But we generally find in dealing with savage tribes that a belief in a future life is accompanied by a belief in rewards and punishments in another world. This implies the holding of a Moral Law however rudimentary the belief may be, and in addition to this the further belief of a personal judge who will apportion future rewards and punishments. The care shown also in *dressing* and *painting* the body of the deceased in these Palæolithic burials, shows that the dead man was expected to appear at the Court or Judgment Hall of some Mighty Being to whom he was responsible for his conduct on Earth, so that the deceased had to be arrayed in his best robes for this solemn appearance. All this implies the possession of a genuine religious belief.

Totemism and Belief in Subordinate Deities.

Everyone acquainted with the relics of Palæolithic Man knows how frequently the figures of animals are carved on slabs of slate or pieces of ivory. Sometimes *pictures* are engraved,

* See *Les Cavernes et leur Habitants*, by M. Fraipont, pp. 102-104. Also *La Poterie en Belgique*, by MM. Fraipont and Braconier in *Revue d'Anthropologie*, Juillet, 1887.

† A further list of the discoveries of Palæolithic pottery is given in Southall's *Age of the Mammoth*, pp. 72-77.

but generally figures of animals are carved alone. Dupont thought that the cave-dwellers on the banks of the Lesse were fetish worshippers because he found a solitary mammoth's bone in the cave of Chaleux.* But this was probably a part of a repast. The numerous carvings, however, on the *Batons du Command* (or sceptres) of the chiefs in Palæolithic times must be interpreted in a different manner. It has been conjectured with great probability that the horses, reindeer, and elephants carved on Palæolithic relics represent the Totems of the different tribes, and that these animals were worshipped as the guardian spirits of the tribe. Of course there are not only *tribal* Totems, but *family* and *individual* Totems also.† Totemism is widely distributed among the savage tribes of Africa, Australia, and North America, but I cannot discuss its present character and distribution.

As to the opinion that the carvings of animals on the sceptres and ornaments of Palæolithic Man represent guardian spirits I cannot do better than quote the words of Sir William Dawson, who says—"I have already stated that the carvings on ivory and bone found in the caves of the Dordogne, in France, might be regarded as the Totems of their possessors, the emblems of their guardian manitous. This has a bearing on the significance which we are to attach to the carving supposed to represent the mammoth, found in one of these caves, and which has so often been figured and described as an evidence that Man existed before the disappearance of this animal. That some great warrior or chief of the Palæolithic Age had the mammoth for his armorial bearing, and for the emblem of his guardian genius. . . . The fishes, reindeer, and mammoths carved on the bone implements of Palæolithic Man were not merely works of art, undertaken to amuse idle hours. As interpreted by American analogies, they were the sacred Totems of Primeval Hunters and warriors, and some of the rows of dots and scratches, which have been called "tallies," may be the records of offerings made to these guardian spirits, or of successes achieved under their influence.‡ Mr. W. C. Borlase also declares that the roving tribes of Northern Europe in prehistoric times worshipped animals, and, like the American Indians carried their figures.§

* *Étude sur les Cavernes des bords de la Lesse et de la Meuse*, p. 21.

† The best account of Totemism with which I am acquainted is found in the *Encyclopedia Britannica*, Edition IX, Vol. XXIII, pp. 467-476.

‡ *Fossil Man*, pp. 275, 265.

§ *The Dolmens of Ireland*, Vol. III, p. 879.

It has been thought that these Palæolithic carvings of animals were allied to the fetishes of the Western African tribes. It may have been so, but many of the Negroes of West Africa who attach a superstitious reverence to these fetishes adore a supreme god also.

Supreme Gods.

If these figures represented minor divinities and guardian spirits, is there any evidence that Primeval Man had any higher beliefs, and adored supreme gods? Let us see what can be said on this point.

There are some theorists who hold that in Palæolithic times the worship of the sun was practised by the earliest men. On the "staffs of office" carried by these ancient men we often find a representation of the disc of the sun, with rays spreading from it on all sides. M. Girod has described a carving of the sun with diverging rays found in the cave of Laugerie-Basse in the Dordogne.* M. Piette has found a similar representation of the sun in the cave of Gourdan in the Pyrenees, and has found the sun three times engraved on another baton which either belonged to a chief or a priest. Possibly these were Totems, but the sun must have been—as it always is—the Totem of the Supreme God. A strange theory concerning the worship of the sun in Palæolithic times has been put forward by M. Rochebrune.† He states that all the caves which he had explored in Charente, and which contained the remains of Palæolithic Man, opened to the north-east. This was—so he declares—because Palæolithic Man could, from the mouth of these caverns, worship the rising sun. I make no comment on this theory. The carvings of the sun on the sceptres of office used in Palæolithic times may indicate that the chief was the sun of his tribe for power, wisdom, and glory, and that his people were delighted to enjoy the sunshine of his favour. But besides this there are indications that the worship of the serpent, as the great deity of evil, prevailed in Palæolithic times. The evidence for this is striking: let us examine it in detail.

MM. Christy and Lartet found in the cave of La Madelaine in the Dordogne, in an undoubted Palæolithic deposit, a fragment of a reindeer horn on which was carved a remarkable picture.‡

* *Les Invasions Paléolithiques*, Plate XX.

† *Memoirs sur les Restes d'Industrie aux Temps Primodiaux de la Race Humaine recueillis dans le Département de la Charente*, pp. 26, 27.

‡ See *Reliquiæ Aquitaniæ*, Book II, Plate II, fig. 8, p. 16.

It represents a man perfectly naked, with his right arm raised in the act of striking. By his side stands a horse, evidently domesticated, receiving the blow. Another horse stands close by. Behind the man is the sea, which is indicated by curved lines representing waves. Partly in the water and partly on the land is a gigantic serpent, which is clearly landing to make an attack upon the man, who stands helpless with his back to the monster. MM. Christy and Lartet declare that they are unable to interpret this picture. Professor Boyd Dawkins supposes* that it represents a hunter attacking a herd of wild horses, and that the serpent is really a gigantic eel! This idea, however, is refuted by the horses standing quietly by the side of the man, with their faces turned towards him, while it entirely ignores the threatening attitude of the serpent, which is three times the size of the man. Moreover, as the eel is harmless, and it would not be drawn landing from the sea and attacking the man. Sir William Dawson thinks† that the picture portrays a man migrating with his horses from the coast to an inland district. This view cannot be accepted, for the horses stand close to the man and are approaching him, and have no burdens on their backs. Moreover, the serpent, which is the most important part of the picture, and which is attacking the man, is by this theory unexplained. The best explanation of this Palæolithic drawing is surely the following: It represents a man sacrificing horses to appease the wrath of the mighty Serpent-God, which has its abode in the sea. This explains the anger of the serpent, and the man raising his hand to kill the horses to propitiate its wrath. On this explanation every portion of the drawing is completely harmonised.

Another carving in the same cave of La Madelaine further supports this view. This represented a great serpent, which was carved on a fragment of bone. The serpent's mouth was open, and its eye and powerful teeth and its scales were strikingly depicted.‡ Around the serpent were the waves of the sea, exactly as in the former carving.

Another striking proof of serpent worship in Palæolithic times is found in the baton of Montgaudier. This is a fragment of a reindeer horn, which probably belonged to a priest, or to a

* *Early Man in Britain*, p. 214.

† *Fossil Man*, pp. 266, 268.

‡ *Reliquiæ Aquitanix*, B, Plate XXIV, Fig. 4, p. 159.

great chief.* On one side of this baton (or sceptre) were carved two monstrous serpents. These serpents are in a threatening attitude, and their bodies, tails, and scales are engraved with beautiful exactitude. These serpents are *marine*, because on the other side of the baton were fish of the sea, one of which was dead, being transfixed by a harpoon.

Now let us ask the question, *why* were the *marine* serpents carved with such care on the sceptres of the chiefs of the Palæolithic Age? It could not be because of their size, because all the serpents of the Palæolithic Age were very small and insignificant. They could not, therefore, have been carved for their importance: there must have been *another* reason. It is certain also that there were no serpents of importance in the *sea*, and why should great *sea-serpents* be engraved on the sceptres of the chiefs of those primeval days? The only reply is, that these serpents were carved for a *religious* and *mythological* reason, and in order to represent some terrible divinity which was supposed to have its home in the sea.

It is readily admitted that a great deal of this is speculative. Still, it is hardly possible to deny the indications that exist and they ought not to be passed over. Let us take another case. In a Palæolithic deposit in the cave of Kesslerloch, in Switzerland, amid other human relics, a long fragment of a bone sceptre was found, on which was engraved by dotted lines the body of an immense serpent.† The head and tail are wanting, but the serpentine body cannot be mistaken. Any serpents that may have lived in Switzerland in the Palæolithic Period must have been diminutive indeed. A religious motive must have induced the artists to carve serpents on their wands of office. It is also very unlikely that the serpent, which was of a most diminutive character, could ever have been the Totem of a tribe in Western Europe from its importance. The python in South Africa and the rattlesnake in North America are tribal Totems. But the former is formidable because of its size, and the latter because of its deadly poison. Hence the reason for their selection and their adaptation as Totems. But neither of these reasons apply to the diminutive serpents of Western Europe. It may be that the round holes in the Palæolithic sceptres are representations of the sun, for they can hardly have been meant for ornament. It is singular that

* This baton is figured by Cartailhac in *La France Préhistorique* p. 82.

† *Excavations at the Kesslerloch*, by Conrad Merk, Plate VI, Fig. 23.

the worship of the sun and the worship of the serpent are constantly found united. This was the case among the Aztecs at the time of the Spanish conquest. In ancient Babylon, also, the sun was adored, and great veneration was attached to the evil deity which, as a serpent or dragon, dwelt in the ocean, and was called by the ancient Babylonians "the huge seven-headed serpent who pounds the waves of the sea."* Even at the present day the semi-civilized Indians in New Mexico and Arizona worship the sun and pay religious homage to the rattlesnake. The great serpent-mound near Oban in Western Scotland has been well described by Miss Gordon Cumming,† and similar mounds in the form of a serpent exist in North America‡ and even in Australia. Now it is a singular fact that the Baton of Montgaudier, which is a Palæolithic sceptre, contains a round hole made in its end which might represent the sun, and on one side there are two great serpents which are admirably carved.§ Here then are the sun and the serpent together. Similar associations are found in the Palæolithic caves of La Madelaine and Kesslerloch. Among the Hottentots of South Africa in former days the same dual worship existed, mingled with the worship of sacred stones and sacred wells.|| In Ancient Britain the same kind of worship was practised.

Whatever difficulties may attach themselves to the explanation of these facts, they ought not to be entirely passed over. It will not do to say that, so far as the men of the Quaternary Period are concerned, the indications are too slight for notice. Facts are constantly accumulating, and they demand explanation, or patient accumulation before theorizing. To take one more instance only. Some of the figures portrayed on the walls and roofs of the painted caves lately discovered in France and Spain have been held to have a religious significance.¶ On this I make no comment and offer no opinion, as the subject is beset with many difficulties.

Here I close this investigation. I readily admit that the evidence I have adduced to show that the earliest Quaternary men possessed a religion is but slight. But may I ask how it is otherwise to be interpreted? If I have drawn wrong

* *The beginnings of History*, by François Lenormant, p. 109.

† *In the Hebrides*, pp. 46-49.

‡ *Prehistoric America*, by the Marquis of Nadaillac, p. 126.

§ *La France Préhistorique*, by E. Cartailhac, p. 82.

|| *The Supreme God of the Khoi Khoi*, by Theophilus Hahn, pp. 79-105.

¶ *Ancient Hunters*, by W. J. Sollas.

deductions from the facts, will anyone examine the facts himself, and tell me how they are to be explained? Will anyone be good enough to go over all the facts I have adduced, and to show me *where* and *why* I have been wrong, and to give the true explanation?

But if I am right in my conclusions, it follows that Primitive Man was a far higher and nobler creature than many materialistic theorists imagine. Religion, however debased it may be, is the sign of Man's nobility and special nature. The possession of religion is characteristic of Man alone. Its existence creates an impassable gulf between Man and the lower animals, and the presence of religious beliefs amongst the earliest men proves that the first races of men who inhabited the earth were no nearer to apes or ape-like creatures than are the men who live on the earth to-day.

DISCUSSION.

The Rev. J. J. B. COLES asked: What in the judgment of scientific men was the shortest period of time which they could assign to the Quaternary period?

Professor HULL replied that with geologists the question of time did not hold the field: the geological periods were not defined as to their duration in time; time, as we understand it in our present experience, was not for geologists and palæontologists, but there were clear indications of the presence of man in these islands before the Glacial Period, when the British Isles underwent a great refrigeration, and the country was elevated thousands of feet above the present level of the ocean. The animals which, from their remains, we saw to have been contemporary with primeval man, were driven southward into Africa by the gradual uprise of the country and the lowering of the temperature. This series of changes implied a period of enormous duration, for it was no case of a sudden volcanic outburst; the changes involved were gradual in character, and were part of a slow continual process.

Mr. M. L. ROUSE said that he believed that the relics of Palæolithic man were found only near Ipswich in this country. Professor Boyd Dawkins, at the Meeting of the British Association, held at Cambridge several years ago, regarded Palæolithic man as more recent than the Glacial Epoch. If so, we might consider that Palæolithic man represented the antediluvians. Thus Professor G.

Fredk. Wright, of Oberlin, computed from the length of the gorge of Niagara that the Falls originated some 7,000 years ago; certainly not more than 10,000 years ago. In the discussion that followed, five speakers took part, two of whom supported Professor Wright. Professor Geikie said that the human period was shorter than many writers had claimed.

Professor LANGHORNE ORCHARD said that Professor Boyd Dawkins declared that there was no evidence of man before the post-glacial river gravels, which would imply an antiquity within limits of from five to ten thousand years. He thought that the Meeting was greatly indebted to the author of this paper: he had shown that there was evidence that Palæolithic man had a religion and believed in a future state. The evidence given in the paper might be slight in detail, but its cumulative effect was great. The placing of food beside a corpse showed a distinct belief that the soul of the man continued to exist after death, so the carving of the sun and the serpent on the baton pointed to a belief in good and evil spirits, and there is much force in the argument from the praying figure (page 129). He desired to express his cordial agreement with the author in his remarks as to evolution.

Mr. W. WOODS SMYTH:—Mr. Whitley leaves us in doubt as to where he places Palæolithic man and the Pleistocene Period. Were they pre-Adamic or post-Adamic in the realm of time? To place them as post-Adamic would be opposed to all the sound evidence that we possess. And we cannot push the Adamic era back beyond seven thousand years.

The facts Mr. Whitley adduces in favour of primitive man's religion do not constitute evidence. Had Palæolithic man closed up the cave he dwelt in at the end of his age, then these facts would amount to evidence. But we know that he did not do so, and men of later times dwelt in these caves after him. Ivory is a heavy substance; and the ceaseless earth tremors and movements, and the occasional efforts of the cave-dwellers to search the floors of their dwelling, would tend to make such relics sink, and so would render the facts submitted of no value as evidence.

We know, however, that primitive man must have had a religion. His dreams, as Herbert Spencer points out, would affect his mind. The reappearance in dreams of dead ancestors and friends would lead him to regard them as still living, and reverence for them would

lead him to deify and worship them. However, the word "sacrifice" does not suit their religion. There is no evidence of it anywhere. It is singular that Mr. Whitley should mention that the great mammals of tropical zones once dwelt in lands now temperate, and yet should be quite sure there were no large serpents there also. It is singular also that he should be so emphatic about the perfections of primitive man, and yet make no reference to the formation of the skulls of the Neanderthal man and of the man of Spy, both evidently representing races less truly human than *Homo sapiens* of later times.

Mr. WALTER MAUNDER said that it was quite true, as Mr. Gath Whitley had so frankly admitted, that the evidence to show that the earliest Quaternary men possessed a religion was but slight. But that which was astonishing, was, not that the evidence was slight but, that there should be any evidence forthcoming at all. Consider, if the British race perished and ten or perhaps a hundred thousand years hence another race visited these islands, what indications would be left of our religion? Nothing but the foundations would remain of our churches. Would there be anything about the foundations of St. Paul's to indicate the religious beliefs of those who had built it?

The Rev. J. J. B. COLES said they ought not to be afraid to face the strongest arguments of scientific men. There was a great opportunity before the Victoria Institute to present a full and complete synthesis of the evidence drawn from science, from philosophy, and from revelation on this subject of the antiquity of man. He hoped that some day the Institute would set aside an afternoon for the special discussion of this question. During the dark ages much knowledge was lost; they learnt from Holy Scripture that when men did not choose to retain God in their knowledge, He gave them over to judicial blindness; thus some of this lost knowledge had never been recovered.

The Rev. M. ANSTEY said they must draw a distinction between exact sciences like Mathematics and Astronomy, and speculative sciences like Geology or Palæontology. In the exact sciences we reached certain definite positive conclusions, commanding universal assent, and to which the element of certainty was attached. But there were other sciences into which the element of speculation very largely entered. They were built up on the basis of certain presuppositions or assumptions, the truth of which had never been

verified, and they could therefore only yield highly problematical or speculative results.

Geology was a speculative science: it involved the assumption that the forces in operation to-day were identical with the forces that had been in operation throughout all past time; it involved the assumption that all geological changes took place by slow and gradual processes involving the lapse of long periods of time; it involved the assumption that the lower the type of the organism embedded in fossil remains the earlier must have been the date of its appearance. But these were mere assumptions, not ascertained scientific facts, and the inferences drawn from them were challenged by a rival school of geologists, who maintained that certain vast changes in the earth's crust took place, not gradually, but suddenly, and that the period of time claimed for the occurrence of these changes might be abridged by centuries or even by millenniums.

Similarly, it was sometimes said that a psalm which indicated a nobly spiritual conception of God could not have been written by David, but must have been the work of a later writer, because the age in which David lived was an age of primitive barbarism in which a highly spiritual conception of God could not yet have been developed. But this was only an inference drawn from an assumption and much of the work of the Higher Critics rested on a similarly insecure foundation.

Professor HULL contested Mr. Anstey's assertion. Geology was not an inexact science. The fossil-bearing strata were evidently deposited slowly, for they were deposited in water, but neither Geology nor Palæontology had anything to do with stone implements. Perhaps if Mr. Anstey would read Lyell's *Principles of Geology* he would come to the conclusion that Geology was an exact science as regarded its principles. It was only as regards details that it could be considered "inexact."

The CHAIRMAN asked the meeting to return a hearty vote of thanks to Mr. Whitley for his valuable paper. It was true that the evidences he had been able to bring forward as to the religious beliefs of primitive man were but slight. Nevertheless they were very interesting. As to the antiquity of the earliest men, could they be certain that these primitive men were really contemporary with the animals whose bones were found with them? Might not the men have been later dwellers in these caves?

LECTURER'S REPLY.

In reply to Mr. W. Woods Smyth, who revives the exploded theories of Herbert Spencer on the origin of religion, it is impossible to hold these in the light of modern research. They are pure guesses and nothing more. Mr. Smyth says that sacrifice was unknown to primeval man, but I have proved the contrary from the picture at La Madeleine, and he has not attempted to controvert my arguments. Every geologist believes in the existence of the great mammals of the Pleistocene Period in Europe, because there is conclusive evidence to prove it; but I do not believe in the existence of great land serpents in Europe at that time, since none of their remains have been discovered. As to the Neanderthal skull, it is now known that the earliest measurements of it were too small, but even so they gave it a cranial capacity greater than the skulls of the ancient cultivated Peruvians. Its antiquity is also very doubtful. Rodolph Wagner maintained that it was the skull of a modern Dutchman, and Von Mayer that it was the skull of a Cossack, killed in the war of 1814. Similar remarks apply to the Spy skulls, which are even larger than the Neanderthal skull.

In reply to Mr. Howard, the bones of men and of animals found in the caves to which I have referred must be of the same antiquity, because they lie side by side, are in the same mineral condition, and are overlaid by genuine Paleolithic deposits. Thus the human relics in the cave of Frontal were overlaid by a Paleolithic deposit of clay evidently formed after the human bones and relics were placed in the cavern.

Mr. Woods Smyth further states that the facts I adduce do not constitute evidence. I reply that he has made no attempt to refute them, and that taken together their cumulative effect is unanswerable. On another point, Nature, by introducing a deposit of clay or gravel, or by covering the relics by a thick bed of stalagmite, can close a cave, as effectually as Man could do it. While the ivory, of which some of the relics to which I have referred are made, is shown to be of paleolithic age, since it is cut into the form, or bears the images carved upon it, of animals which only lived in that period, and it is cut in a manner which was only practised then.

565TH ORDINARY GENERAL MEETING,
HELD IN THE CONFERENCE HALL, CENTRAL HALL,
WESTMINSTER, ON MONDAY, MARCH 1ST, 1915,
AT 4.30 P.M.

SIR FRANK W. DYSON, F.R.S., ASTRONOMER ROYAL, TOOK THE
CHAIR.

The Minutes of the preceding Meeting were read and confirmed.

The SECRETARY announced the election of the Rev. Martin Anstey and the Rev. G. Campbell Morgan as Members of the Institute.

The Rev. Prebendary H. E. Fox, M.A., opened the Meeting and introduced the Lecturer, Professor Alfred Fowler, F.R.S.

THE SPECTRA OF STARS AND NEBULÆ. By Professor
A. FOWLER, F.R.S.

[ABSTRACT.]

THE purpose of this lecture is to give some indication of the way in which the wonderful power of the spectroscope has been utilised in investigations of the chemistry of stars and nebulæ, and of the bearing of such knowledge upon the great question of celestial evolution.

The only intelligible message that a star sends to the earth is borne on its rays of light, and it is only by the analysis of such light that we can learn anything at all as to the chemical composition and physical condition of the star. Such an analysis has been rendered possible by the invention of the spectroscope in its various forms. Each element, and some compounds, has its own distinctive family of spectrum lines or bands, by which it can be identified wherever it occurs in the luminous condition. In opposition to earlier ideas, it is now known that the same substance may give different spectra when excited in different ways. Indeed, one of the most prominent landmarks in the recent history of the interpretation of solar and stellar spectra is the investigation of such changes in passing from the moderate temperature of the electric arc to the violent action of the condensed electric spark, which was first made by

Sir Norman Lockyer. Lines which are intensified, or which only appear, under spark conditions have been called "enhanced lines," and it is to the study of such lines that much of the progress of recent years has been due.

Kirchhoff's famous experiment of 1859 on the reversal of spectrum lines from bright to dark is of fundamental importance in astronomy, because the spectrum of the Sun, and the spectra of nearly all the stars, show dark lines on a bright continuous background. The experiment proves that we can identify the substances which produce such dark lines, just as surely as if they were bright, by the process of matching them by emission spectra artificially produced.

In the spectrum of the Sun, which may be regarded as the nearest star, Rowland has catalogued some 20,000 dark lines, and the great majority of the more prominent have already been matched by spectra produced in the laboratory, largely from common substances such as hydrogen, sodium, iron, and calcium. Observations of eclipses of the Sun have shown that these gases and vapours exist chiefly in a shallow stratum, about 500 miles in depth, which has been called the "reversing layer" or "flash stratum." Hydrogen, helium, and calcium are the chief constituents of the overlying chromosphere, which has a depth of about 5,000 miles. The corona, which is the most striking feature of a solar eclipse, exhibits a few bright lines of at present unknown origin, and has apparently nothing to do with the dark lines of ordinary sunlight. Many of our chemical elements have not yet been traced in the Sun, but reasonable explanations of their lack of visible manifestation have been advanced, and there is no sufficient reason to suppose that the composition of the Sun is materially different from that of the Earth.

Our present extensive knowledge of stellar spectra has been made possible by the application of photographic methods of observation. All stars are alike in the sense that they are highly heated self-luminous bodies, but they are not all alike in the character of the light which they emit. Thousands of them resemble the Sun very closely, and what has been learned about the Sun in more favourable circumstances is equally applicable to stars of this class. It was early found that the number of distinct varieties of stars was by no means large. Father Secchi recognised four principal types of stellar spectra, which he numbered from I to IV, beginning with white stars and ending with red ones. It was not long before this classification came to be regarded as something more than a mere

convenience of description, for it was found that the different types were not abruptly divided, but were connected by spectra representing well-marked transition stages.

Here we get the first definite indications of an evolution of the stars somewhat analogous to that which Darwin enunciated for organic life. The differences in the spectra of the stars are not to be attributed primarily to differences in composition, but to their having reached different stages in an evolutionary process. Continuity of the spectral series practically compels us to believe, for example, that our Sun was once a star like Sirius, and that in due course Sirius will become a star like the Sun, the Sun meanwhile having become a red star with a spectrum of bands. We now speak quite freely of young or early-type stars, and of old or late-type stars. On the Harvard system of classification, the successive stages are designated O, B, A, F, G, K, M, N, in the order of early to later types.

The inclusion of solar, or G-type, stars in the evolutionary scheme necessarily implies that all the stars are similar in chemical constitution to the Sun, but independent evidence of the universal distribution of terrestrial kinds of matter is to be found in abundance in the analysis of individual stars. It is especially instructive to begin at the lower end of the stellar sequence, where there is every reason to believe that the temperatures of the stars involved are relatively low, so that the reproduction in our laboratories of the lines and bands of which they are characterised should present the minimum of difficulty. This expectation is completely realised. In the relatively cool stars of classes N and M, we find bands of carbon and titanium oxide respectively, together with such metallic lines as can be produced at comparatively low temperatures. As we go upwards in the series, from the red stars, through the yellow and white ones, to the Wolf-Rayet stars of class O, it has been found that while we continue to deal in the main with familiar elements, the reproduction of the stellar lines demands gradually increased energy of the exciting sources. Beginning with flames and electric discharges of low intensity, we end near the upper limit of the series with the most powerful discharges to which our spectrum tubes of glass or quartz will submit. The surprising thing is that the resources of our laboratories are already adequate to reproduce so many of the lines which occur in the spectra of the stars, even of those which are believed to be at the highest temperatures. There are still some celestial lines of unknown origin, but previous experimental success encourages the hope that they may yet be reproduced from terrestrial matter.

The generally accepted view that the ancestors of stars are represented by nebulæ requires that these bodies should contain all the materials of which stars are known to be composed. But the nebulæ have a very simple spectrum of bright lines, among which only those belonging to hydrogen and helium have been certainly identified. Hence the modern view, ably supported by the mathematical investigations of Professor Nicholson, that nebulæ consist largely of atoms of very primitive forms of matter, and that the stellar sequence may possibly indicate the order of evolution of the chemical elements as well as that of the stars themselves. However that may be, observations lately made at the Lick Observatory have shown a direct relation between the spectra of nebulæ and the Wolf-Rayet stars of Class O, which stand at the head of the stellar sequence and thus mark the first stage in the condensation of nebulæ. That nebulæ must contain matter other than that indicated by their spectral lines is also strongly suggested by observations of "new stars," which at one stage show lines of iron and other known elements, and at a later stage exhibit the lines characteristic of nebulæ.

Further investigations in many directions are still needed to complete the story, but all modern work tends to strengthen our belief in the chemical unity of the universe, and in an evolutionary development of stars from the primitive conditions represented by nebulæ.

. A full report of Professor Fowler's lecture and of the discussion following it will be published in Volume XLVIII of the Journal of Transactions of the Institute.

566TH ORDINARY GENERAL MEETING,

HELD IN COMMITTEE ROOM B, THE CENTRAL HALL,
WESTMINSTER, ON MONDAY, MARCH 15TH, 1915,
AT 4.30 P.M.

LT.-COL. G. MACKINLAY, CHAIRMAN OF COUNCIL, PRESIDED.

The Minutes of the preceding Meeting were read and confirmed.

The SECRETARY announced the election of Lady Jane Taylor, and of the Rev. J. W. Fall, M.A., as Associates of the Institute.

The CHAIRMAN said that the Institute was most fortunate in having for their consideration that afternoon a paper by Dr. A. M. W. Downing, for many years a Fellow of the Royal Society, and Superintendent of the Nautical Almanac. He greatly regretted that Dr. Downing was not able to be personally present with them, and in his absence would call upon the Secretary to read his paper on "The Determination of Easter Day."

THE DETERMINATION OF EASTER DAY. By A. M. W.
DOWNING, M.A., D.Sc., F.R.S.

IN order to understand clearly the principles underlying the determination of the date of Easter in any year it is desirable, in the first place, to make ourselves acquainted with the definition of Easter given in the English Prayer Book. This definition has been handed down to us from the time of the Council of Nicea, A.D. 325, and is designed to preserve, as nearly as possible, the same relation between the times of celebration of Easter and of the Passover as obtained at the time of the Resurrection, and especially that the former should not be celebrated before, or on the same day as, the latter; hence the second clause of the definition: "Easter Day is always the first Sunday after the full moon which happens upon, or next after, the 21st day of March; and if the full moon happens upon a Sunday, Easter Day is the Sunday after." This definition (though copied from the Act of Parliament which regulates the matter for us) requires a further explanation to make it perfectly clear. The "moon" referred to is not the

real moon of the heavens, but the artificial moon of the calendar, which, as we shall see later on, is regulated by certain definite rules by means of which its phases are made to agree pretty accurately with those of the real moon. This artificial calendar moon is accounted to be "full" on the fourteenth day, *i.e.*, thirteen days after the new moon; an artifice suggested by the practice prevalent amongst the Jews in early times of counting the "new" moon from the time of first visibility of the crescent, and considering it to be "full" on the following fourteenth day. This artifice secures an approximate agreement between the times of "full" (but not between the times of "new") for the calendar moon and the real moon of the heavens.

The decision of the Council of Nicæa, with regard to the celebration of Easter, ended what is known as the Paschal controversy, which had disturbed the Church for a great many years previously. Certain Asiatic Christians kept their Paschal solemnities on Nisan 14, and do not appear to have paid any particular attention to the following Sunday, as a commemoration of our Lord's Resurrection, except on those occasions on which it happened to be the "third day." The Jews, it will be remembered, killed the Paschal lamb on the fourteenth day of the first month, or Nisan 14, "between the evenings." It was then eaten during the following night, which would be the commencement of the day Nisan 15, according to the Jewish method of reckoning days. On account of their practice in this respect, these Asiatic Christians were called "Quartodecimans," and it is stated that they claimed the sanction of St. John the Apostle as their authority for their mode of celebrating Easter. On the other hand the Western Churches, from very early times, made the Sunday following Nisan 14 to be the central and chief day of the Easter solemnities, which for them lasted an entire week.

The Council of Nicæa decreed, then, that Easter Day should be a Sunday having a certain position with regard to the vernal equinox (then assumed to fall on March 21) and a certain position with regard to a specified full moon. This involves a consideration of three incommensurable quantities, the tropical year, the week, and the lunar month, which necessarily entails a considerable amount of complication. We shall find, however, that once the requisite tables are constructed, the process of finding the date of Easter is a perfectly simple one.

And first, with regard to the tropical year. The old style or Julian year was introduced by Julius Cæsar, with the assistance of Sosigenes, an astronomer of Alexandria, and is perhaps one

of the most remarkable achievements of that most remarkable man. The Roman year had previously been a lunar year, which of course requires constant readjustment by intercalation, to keep it in practical harmony with the solar year. In B.C. 46, it was found that the months were occurring far from the seasons with which they were supposed to be connected. It was necessary to make this "year of confusion" to consist of 445 days to get things right again. Cæsar wisely abandoned the lunar year altogether, but so far deferred to usage (it is said) as to fix the commencement of his first reformed year on the day of the following new moon instead of on the day of the winter solstice. At all events a new moon actually occurred on January 1, B.C. 45. The mean Julian year consists of $365\frac{1}{4}$ mean solar days; and as a year suitable for everyday purposes cannot contain fractions of a day, the rule adopted was that three years in succession should consist of 365 days, and that every fourth year should consist of 366 days. Thus the average length of each of the four years is $365\frac{1}{4}$ days. The year of 366 days is called "bissextile" because the additional, or intercalated day, was inserted after February 24, and, in the Roman method of reckoning, this day is the sixth day before the Kalends of March. So that in every fourth year there were two "sixth days" before the Kalends of March, and hence the name "bissextile." "Leap year," the other and more familiar name for the year of intercalation, is so called because the day of the week corresponding to any particular day of the month, after the intercalary day, advances two places with reference to its position in the preceding year, instead of one place as in ordinary cases. Thus January 1, 1916, is a Saturday; but since 1916 is a leap year, January 1, 1917, is a Monday, instead of being a Sunday, as it would have been had 1916 been a common year.

The Julian calendar has thus the merit of great simplicity, but unfortunately, as time went on, it was found to be subject to considerable inaccuracy, and it was considered that reformation was desirable. In the middle of the 16th century it appeared that the spring equinox, which ought to have occurred on March 21 (the day on which it was assumed to have occurred at the time of the Council of Nicæa) actually occurred on March 11. Luigi Lilio, a native of Calabria, found the error of the mean Julian year to amount to about three days in 400 years. His scheme, submitted to Pope Gregory XIII, was that ten days should be dropped, so as to bring the equinox up to March 21 again, and that a more accurate length of the mean

year should be adopted. The Pope referred the matter to a commission, the principal member of which was a German Jesuit named Schlüssel, better known by his Latinised name of Clavius. It was decided, in order to bring up the spring equinox to what was considered to be the proper date, that the day after October 4, 1582, should be called October 15, and in order to correct for the assumed error in the length of the mean Julian year, of three days in 400 years, that the centennial years should be counted as leap years only when the number of centuries is divisible by four. Thus the years 1700, 1800, and 1900, which in the Julian calendar are leap years, are common years in the reformed calendar, whilst the year 2000 is a leap year in both calendars. The Gregorian calendar was immediately adopted in Roman Catholic countries, but the old style remained in force in England until 1752. The accumulation of error in the Julian reckoning having by that time amounted to eleven days, it was decided that the day after September 2 in that year should be called September 14. It will be noted that this change does not involve any change in the week-days, but only in their numeration as days of the month. Wednesday, September 2, was followed by Thursday, September 14. And in Russia and Greece, where the old style is still continued, the day of the week is the same as with us, only the day of the month is different. Thus Monday, March 15, new style, corresponds to Monday, March 2, old style, the difference of the styles now amounting to 13 days.

It will be found that the mean length of the Gregorian year is 365·2425 days. The actual length of the tropical year being 365·2422 days, the error of the mean Gregorian year amounts to 3 ten-thousandths of a day, or 26 seconds, *per annum*, or to one day in about 3,300 years. This is sufficiently accurate for practical purposes. It may, however, be pointed out that as the error of the mean Julian year amounts, with great exactness, to one day in 128 years, greater accuracy would have been attained by following the rule that one intercalary day should be dropped in every such period. But the practical inconvenience of this arrangement would be much greater than that of the Gregorian rule, for which the increased accuracy would scarcely be a sufficient compensation.

It must be understood that the difference of styles causes a great deal of trouble, and is always a possible source of confusion to those who have to take account of it. And many a time astronomers and chronologists are constrained to wish that Pope Gregory and his advisers had adopted the alternative

scheme of assigning the spring equinox to March 11, instead of dropping ten days of the year. But the idea that the spring equinox had been assigned to March 21 by a Church Council was too firmly rooted in men's minds to be disregarded, and the opportunity of effecting a simple and natural reformation of the calendar was lost for ever. That great astronomer, the late Professor Newcomb, boldly asserted that, in his opinion, the so-called reformation of the calendar was a mistake; that it would have been far better to have adhered to the Julian style rather than that people should be worried by the inconvenience caused by the break of continuity. His view was that the change of the seasons relatively to the civil date, consequent on adherence to the old style, would progress so slowly as not to cause any practical inconvenience to the general public.

It is worth noting that our calendar does not rigidly fix the actual spring equinox to March 21; there is an oscillation backwards and forwards extending over two days. At the present time the equinox frequently occurs on March 20.

The next point to engage our attention is the determination of the day of the week corresponding to a given day of the civil month in a given year. To find Easter Day we must know what days of the year are Sundays. This is accomplished by means of the Dominical Letters, the use of which, as adopted in the Prayer Book calendar, we must now consider.

The Dominical, or Sunday, Letters are the first seven letters of the alphabet attached to the several days of the year: A to January 1, B to January 2, C to January 3, and so on, over and over again, throughout the year. No letter is attached to February 29, the intercalary day in the English Ecclesiastical and Civil Calendar. To find the Sundays throughout the year (for a common year) it is then only necessary to note what letter is attached to the first Sunday in the year, and every day throughout the year to which that letter is attached is a Sunday, and the letter is called the Dominical, or Sunday, Letter for the year. Thus January 3, 1915, was a Sunday, therefore C is the Sunday Letter for 1915, and every day in the year to which the letter C is attached in the calendar is a Sunday. In leap years the same letter (D) applies to February 29 and to March 1, so that after February 29 the Sunday Letter for the year retrogrades one place. There are thus two Sunday Letters in a leap year: one from the beginning of the year up to February 29, and the other for the remainder of the year. For example, in 1916 the Sunday Letters are B A. As a common year consists of 52 weeks plus one day, and a leap year of 52 weeks plus two

days, it is evident that from one common year to the next, the Sunday Letter retrogrades one place, whilst after a leap year the Sunday Letter retrogrades two places. It appears, then, that knowing the Sunday Letter for any year—knowing for instance (as all chronologists ought to know) that January 1, A.D. 1, was a Saturday, with corresponding Sunday Letter B—it is easy to write down a formula from which the Sunday Letter for any other year may be found. A number, occurring in this formula, has to be modified from time to time so as to adapt it to cases of the occurrence, or non-occurrence, of leap years in centennial years of the Gregorian calendar. This formula, translated into ordinary language, with the necessary modifications during successive periods, and the corresponding scale, is given in the Prayer Book calendar. It is not necessary, therefore, to dwell further on this point, except to note that in leap years the Sunday Letter so found will be the second letter for the year, the first being the preceding one in the Prayer Book scale referred to above.

We now come to the most complicated of the problems connected with the determination of Easter Day. To carry into effect the decree of the Council of Nicæa it was necessary to determine the fourteenth day of the moon. But the Council did not say how this fourteenth day was to be found, the duty of determining it being assigned to the Bishop of Alexandria. This arrangement naturally caused a good deal of dissatisfaction to the ecclesiastical authorities at Rome. It was considered derogatory to the Papal See, and efforts were made to render the Western Church independent of Alexandria. This eventuated, in A.D. 437, in the decision arrived at by Hilarius (afterwards Pope), that the moon which governed the date of Easter should not be the real moon of the heavens, but should be an artificial moon supposed to move regularly, and that the full moon should be accounted as occurring on the fourteenth day. The phases of this artificial moon were to be computed by means of the Golden Numbers of the Metonic Cycle, on the assumption that 235 lunations are equivalent to 19 solar years. This artificial moon, and the corresponding Golden Numbers, are still used in the reformed ecclesiastical calendar in the way that must now be explained.

The Golden Numbers are the numbers attached to each year of a cycle of nineteen years, after which the calendar new moons fall on the same days of the Julian year. Thus, if a new moon falls on January 1 in any year, it will again fall on January 1 after a lapse of nineteen Julian years, and to each

of these years the same Golden Number would be attached. This cycle is said to have been discovered by Meton, a celebrated Athenian astronomer, about the year B.C. 433, and was called from him the Metonic Cycle; and the successive years of the cycle, with the dates of the new moons corresponding to each year, were inscribed in characters of gold upon the walls of the temple of Minerva. Hence the origin of the name "Golden Numbers." In the distribution of the Golden Numbers over the successive years of the Metonic Cycle, it was assumed (as indeed was an actual fact at the date of the Council of Nicæa) that a new moon fell on January 1 in the third year of the cycle. The year 0 (or B.C. 1) of our era is reckoned the first year of the cycle; therefore, to find the Golden Number for any year, "add one to the year of our Lord, and then divide by 19; the remainder, if any, is the Golden Number; but if nothing remaineth, then 19 is the Golden Number," to quote the words of the Prayer Book rule.

The determination of Easter by this system made it recur, under the Julian calendar, after each period of 28×19 , or 532 years. This period was called the Paschal Cycle. It was used as a practical means of finding the date of Easter, for a long time before the introduction of the Gregorian calendar.

Before the change of style was introduced into the ecclesiastical calendar it was the practice to attach their proper Golden Number to each of the 355 days of the year which were the computed first days of lunations. Twelve of the Numbers appeared twelve times, and seven appeared thirteen times. This left 130 days in a common year, and 131 in a leap year, without any Golden Number. There are, therefore, this number of days in the year upon which the first day of an artificial lunation does not occur. But in the reformed calendar, as now given in the Prayer Book, a different plan is adopted. It was considered more convenient to indicate the fourteenth day of the calendar moon (being the day of "full" moon) rather than the first day, and it was considered unnecessary to indicate other fourteenth days except those, nineteen in number, which fall in the respective years between March 21 and April 18, both inclusive. It was found that the fourteenth day of the Easter moon must fall between these limits—hence called the "Paschal Limits"—and that Easter Day must consequently fall on one of the thirty-five days, March 22 to April 25, both inclusive. There are thus only thirty-five possible forms of the ecclesiastical almanac. With regard to the accuracy of the Metonic Cycle as a practical means of

representing the dates of phases of the moon, it is assumed that 235 calendar lunations (of thirty or twenty-nine days' duration, combined in a certain proportion) are equal to $6,939\frac{3}{4}$ days, which, again, are equal to nineteen mean Julian years; whence a mean calendar lunation equals 29 days 12 hours 44 minutes 25.5 seconds; being 22.7 seconds in excess of the mean astronomical lunation. But in adapting the cycle to the Gregorian style we have to take account of the assumed error of the mean Julian year, viz., three days in 400 years; and so (allowing for the centennial years not made bissextile in the new style) we find that the time of calendar full moon will advance (*i.e.*, fall later) three days in 400 years. Also it must be noted that $6,939\frac{3}{4}$ days are $1\frac{1}{2}$ hour longer than 235 mean astronomical lunations, and therefore (on account of this error in the adopted length of the mean calendar lunations), the calendar full moons occur $1\frac{1}{2}$ hour too late at the end of each cycle of nineteen years, or 1 day too late in 308 years. In the calendar it is assumed that the error from this cause amounts to 8 days in 2,500 years. And the correction necessary to keep the calendar full moons in fair agreement with the actual full moons is applied by subtracting 1 day from the date of calendar full moon whenever the error amounts to this quantity.

If we now examine the Prayer Book tables (which were drawn up by Bradley, and extend to the year 8500 of our era), we shall see that the Golden Numbers are affixed to different days at different periods of time, *e.g.*, the first Prayer Book table holds good until the year 2199, and after that a readjustment is required. This readjustment is really the application to the cycle of Golden Numbers of the two corrections referred to above. The first, *i.e.*, that depending on the difference between the Gregorian and the Julian style, consists in *adding* one day to the date of full moon, or shifting the Golden Numbers to a position one day later in each of the years 1700, 1800, 1900, 2100, etc., which are leap years in the Julian calendar, but are common years in the Gregorian style. The second correction referred to, *i.e.*, that depending on the error in the assumed length of the calendar lunation, consists in *subtracting* one day from the dates of full moon, or shifting the Golden Numbers to a position one day earlier in each of the years 1800, 2100, etc. So that the same system of Golden Numbers holds good from 1700 to 1899, another system holds good from 1900 to 2199, whilst yet another holds good from 2200 to 2299. An examination of the distribution of the nineteen Golden Numbers,

in the three successive periods mentioned above, will show clearly the manner in which the Numbers are shifted relatively to the different days comprised within the Paschal Limits. It will be noticed, for instance, that no Golden Number appears opposite to March 21 during the period 1900 to 2199. This means that no calendar full moon occurs on that day, and, therefore, that Easter Day cannot fall as early as March 22 during this period. A consideration of the Numbers affixed to April 17 and 18, during the successive periods, is very instructive, as exemplifying one of the peculiar artifices of which the framers of the calendar appear to be so fond. It will be observed that the Golden Numbers xvii and vi have not been shifted in passing from 1899 to 1900, although all the preceding Numbers have been brought down one day later in the series. Now the calendar lunations consist generally of thirty or twenty-nine days alternately, with certain modifications. In general, if a lunation terminates in January or March it is made to consist of thirty days, but if in February or April it is to consist of twenty-nine days. But a special rule is made for the particular case where a calendar full moon falls on either March 19 or 20. It is assumed that if a full moon falls on March 19, or earlier in March, then the April full moon will fall thirty days later. But if the March full moon is on the 20th, the April full moon will happen twenty-nine days later. Thus the calendar full moon of April will fall on the same day (April 18) whether the March full moon happens on the 19th or 20th of that month. To apply this to the particular case before us, it will be seen that during the period 1700 to 1899, the Golden Number vi is affixed to April 18, and that in the preceding lunation it would be affixed to March 19 (being two days earlier than the date to which xiv is affixed), thus giving an interval of thirty days in length. But during the period 1900 to 2199, the Golden Number vi is still affixed to April 18, although in the preceding lunation it would now be affixed to March 20. The interval, therefore, is, in this case, only twenty-nine days in length, in accordance with the artifice to which reference has been made. The framers of the calendar further determined that two full moons must not occur on the same date twice in a single nineteen-year period. And to avoid such a contingency, the device was adopted of putting back the date of a calendar full moon one day, when otherwise two full moons would fall on the same date; Golden Number xvii, which would otherwise have been affixed to April 18 during the period 1900 to 2199, is, therefore, put back to April 17, thus

avoiding collision with vi. An inspection of the "General Tables" in the Prayer Book, especially of "Table III," with its two horizontal lines allotted to each of the dates April 17 and April 18, will show how these artifices are carried through the calendar in the successive periods to which the tables apply.

These regulations confine the dates of the Easter full moons within the Paschal Limits, and ensure that Easter Day shall not fall later than April 25.

In the "Table of the Moveable Feasts for forty-six years" of the Prayer Book will be found the values of the epacts for the different years included in the table. No explanation of the use of these epacts, as a means of determining the date of Easter, is given in the Prayer Book, and in fact, no use is made of them. A few words of explanation may, therefore, be desirable, especially as it is recorded that Pope Gregory's advisers arranged the lunar cycle by the epact. But when the reformed calendar was adopted in England, Bradley preferred to use the Golden Numbers as arranged in the Prayer Book, and with which English-speaking people are, therefore, more familiar.

The epact, as now used in chronology, is simply the age of the calendar moon on January 1 in each year of the nineteen-year cycle. As twelve calendar lunations fall short by eleven days in general of a mean solar year, the epacts for successive years are formed as a rule by the addition of eleven to the value for the preceding year. Just as the Golden Numbers have to be shifted in position, so as to be affixed to different days in different periods, so the epacts have to be adjusted to the nineteen-year cycle, and to the Gregorian style, generally by the addition of a unit at appropriate intervals. By this means the calendar epacts are kept in harmony with the phases of the real moon. During the period 1900 to 2199, the cycle of epacts is that given in the Prayer Book table, referred to above, for the years 1900 to 1918 inclusive. When the addition of eleven to the epact for any year produces a number greater than thirty, this amount must be subtracted from the sum. Thus twenty-nine is the epact for 1900, and this is followed by ten as the value for 1901. It will be noticed that seventeen is the epact for 1918, the last year of the cycle, whilst that for the first year of the cycle is twenty-nine, a difference of twelve. This is an instance of the necessary readjustment of the epacts to which reference has been made above. It will also be noticed that twenty-six is the epact for 1916, following fourteen for 1915, and preceding six for 1917. This substitution of twenty-six for twenty-five is an artifice

corresponding to that employed in the arbitrary shifting of one of the Golden Numbers, as already explained, to prevent the occurrence of two calendar full moons on the same date twice during a single cycle. Such a collision would occur were twenty-five to be used as the epact in this place of the cycle of epacts which is at present applicable. This will be understood when it is explained that, to obtain the date of the Paschal full moon from the epact, it is necessary to subtract the amount of the latter from April 13, or its equivalent, March 44. Since the epact is the age of the moon on January 1, it is also the age of the moon on March 31, and as the date of full moon is found by adding thirteen days to that of new moon, the reason for the rule is evident. The application of this rule gives the date of the Paschal full moon directly if the epact is not greater than twenty-three. But when the epact is twenty-four, or greater, the number of days between the calendar full moons, with which we are concerned, must be added to the date so found. Thus when the epact is twenty-four, we find March 20 (by the subtraction from March 44), and must add twenty-nine days, which brings us to April 18 as the date of the Paschal full moon. An epact of twenty-five, or greater, brings us, by the necessary subtraction, to March 19, or earlier in March, as the case may be, and then, in accordance with the convention already explained, we must add thirty days to the date so found. The epact twenty-five would, therefore, bring us again to April 18, but as twenty-six is the value to be used, the adopted day of Paschal full moon is, in this case, April 17.

Although the explanation of these matters that has now been given may appear tedious, and the rules complicated, still, as was said at the beginning of the paper, once the requisite tables are available, their application is extremely simple and easy. Thus to find Easter Day in 1916: We have seen already that the Sunday Letters are BA; the Golden Number is xvii; the epact is twenty-six. Opposite to xvii in the table of Golden Numbers we find April 17, and the next Sunday is April 23. Or, if we prefer to use the epact, subtraction of twenty-six from March 44 gives March 18, the addition of thirty to this brings us to April 17, and, as before, the next Sunday is April 23. That is how to determine the date of Easter Day in 1916.

It will probably surprise those who have not considered the matter to find how the dates of Easter sometimes diverge widely according as we use the Julian or the Gregorian style for the determination.

The following comparison of dates for a few years will serve as an illustration.

Year.	Eastern Church.		Western Church.
	Old Style.	New Style.	
1913	April 14	April 27	March 23
1914	" 6	" 19	April 12
1915	March 22	" 4	" 4
1916	April 10	" 23	" 23
1917	" 2	" 15	" 8

The equivalent new style date is added, in the case of the Eastern Church dates, for convenience of comparison with the Western Church dates. It is quite unusual for Easter Day in the two systems to occur on the same day in two consecutive years as they do in 1915 and 1916.

It will be understood that the various corrections and readjustments that have been enumerated are for the purpose of preserving a near agreement between the phases of the calendar moon and those of the real moon. The difference is seldom more than two or three days at most. But it is remarkable that, in some critical cases near the Paschal Limits, a difference of a few hours in the times of the phases sometimes makes a large difference in the date of Easter, according as we rely on the real or the calendar moon for the determination. Such a case occurred in 1905, to which it may be of interest to refer. In that year the real moon of the heavens was full at 4 hours 56 minutes Greenwich mean time on the morning of March 21. Therefore, if we were to depend on the real moon, Easter Day would have fallen on the following Sunday, March 26. But, actually, Easter Day in that year fell on April 23, because the calendar moon was full on March 20, and again on April 18; the latter date, therefore—that of the Paschal full moon of the calendar—causing Easter Day to fall on the following Sunday, April 23. In this instance the dates thus differ by four weeks according as we take the real or the calendar moon for our guide in determining them.

The adoption of the calendar moon for such purposes as fixing the date of Easter has certain practical advantages, such as applicability to every terrestrial longitude, that would not be present in the case of the actual moon. Thus, in the instance quoted above, in which the real moon is full at 4 hours 56 minutes Greenwich mean time on the morning of

March 21, we see at once that, for places adopting a time five hours west of Greenwich (the Eastern Standard Time of the U.S.A.) the moon would be full on March 20. And so, in the circumstances supposed, Easter would be celebrated on a different date, depending on the adopted time at different meridians. This inconvenience is avoided by adopting the artificial moon, no attempt being made in the calendar, either in the date of the vernal equinox, or in that of the full moon, to subdivide the day. These dates may, therefore, be considered applicable to every terrestrial meridian.

It has already been stated that the decision of the Council of Nicaea, with regard to the determination of Easter, established a close relation between the time of celebration of the Christian Festival and of the Jewish Passover. But under the reformed Jewish calendar, which has been in use since the year A.D. 358, this close relationship does not necessarily exist. For example, the following cases of discordance occur in the years that have elapsed from 1900 up to the present time :—

Year.	Easter Day.	Nisan 15.
1902	March 30	April 22
1910	„ 27	„ 24
1913	„ 23	„ 22

A brief consideration of the Jewish calendar may, therefore, be of interest.

It is known that in very early times the Jewish year consisted usually of twelve lunar months. But it was recognised even then that for the due observance of the religious ceremonies, many of which were ordained to be observed in relationship with certain seasons of the year, as well as on certain days of the lunar month, the year must be made a luni-solar one. The first effort in this direction was the intercalation of an extra month once in about every three years. Afterwards the more accurate system was adopted of intercalating seven months in every cycle of nineteen years. It appears fairly certain that from the first the new moons, and consequently the commencement of the months, were determined by observation. The moon was assumed to be new when the crescent was first visible, and this was considered to be the commencement of the first day of the month. A great deal has been made of David's statement (1 Samuel xx, 5), "To-morrow is the new moon," as evidence that a cycle, or some method of computation, was used

even in those early days. But there is no corroborative evidence that would warrant us in drawing such a conclusion. And the statement may plausibly be explained as meaning that the date of the last new moon being known, the date of the next one may be inferred with a considerable degree of confidence. The time of new moon, found from the first visibility of the crescent, must, however, have been subject to some uncertainty, especially during periods of unsettled weather. It appears that, under such circumstances, the Mohammedans, whose calendar is wholly lunar, do not postpone the beginning of the month beyond the third evening after the new moon is expected to appear. It would be natural to suppose that the Jews had some such regulation to guide them. But if they had, it does not appear that any record of the fact has come down to us. The month "Abib" (or "Nisan" as it was afterwards called), the first month of the Jewish ecclesiastical year, is of great interest to us on account of its connection with the Passover, and consequently with Easter. The concurrence of the month with the commencement of spring was ensured by the ordinance that a sheaf of barley was to be offered immediately after the Passover, on the sixteenth day of the month. When, in any year, it was found that the barley would not be ripe in time to be offered in the month which would, by anticipation, have been called Nisan, it was the practice to lengthen the current year by the addition of an extra month. The new year would then commence a month later than it would otherwise have done, thus allowing time for the barley to ripen. In later times the identity of the first month was fixed by its relation to the time of the vernal equinox. It is supposed that the new moon of Nisan was held to be that new moon that occurred nearest to the day of the equinox.

The practice of determining the time of new moon by observation and announcement by means of messengers sent out to surrounding places, appears to have been continued in Palestine up to the time of the Dispersion of the Jews, consequent on the destruction of Jerusalem in A.D. 70. It is significant that in outlying districts it was customary even before that event to observe two days for the celebration of the full moons, as there would necessarily be some uncertainty as to the actual day. And it seems necessary to conclude that some special arrangements must have been made, in the case of the large colonies of Jews that were settled abroad, *e.g.*, in Egypt, long before the Dispersion, to enable them to observe their religious ceremonies at the proper time. But after the

Dispersion it was found impossible to continue such a primitive system, and recourse was had to calculations, involving the use of a cycle, for determination of the times of observance of the religious festivals. These cycles were used up to the time of the reformation of the Jewish calendar by Hillel, in A.D. 358. In this system (which continues in use up to the present day), the Metonic Cycle of nineteen years, with which we are already familiar, is adopted as consisting of 235 calendar lunations. The adopted calendar lunation (in which the moon is reckoned "new" at the time of astronomical conjunction) is taken from the very accurate value of a mean astronomical lunation found by Hipparchus, and the calendar year is taken from the not so accurate value of the length of the tropical year found by the same astronomer. In the nineteen years of the cycle there are twelve common years consisting each of twelve lunar months, and seven embolismic years consisting each of thirteen lunar months. The common years consist of 353, 354, or 355 days; whilst the embolismic years consist of 383, 384, or 385 days. The orderly recurrence of the years of different lengths is regulated by elaborate rules. The observance of these rules ensures that the error of the Jewish reformed calendar accumulates very slowly. Assuming that it was correct in the year A.D. 358, when it was first established, the calendar dates are now about seven days later in the year, with reference to the sun, than they were at that time.

It is easy now to see why the dates of the Passover, according to the reformed Jewish calendar, sometimes fall in the month following that in which Easter occurs. It is the month preceding Nisan—the last month of the ceremonial year—that is duplicated in the embolismic years. This proceeding, of course, causes Nisan 15 to occur a lunar month later than it would otherwise have done, and frequently causes it to occur during the lunar month subsequent to that in which Easter is celebrated.

This cursory sketch of certain features of the Jewish calendar must not conclude without drawing attention to a very important rule with regard to the observance of the First Day of the Passover. This day is never allowed to fall on a Monday, Wednesday, or Friday. The prohibition is nowhere expressly stated in the Levitical Law, but it is a Rabbinical rule, which appears to have been made after the building of the second Temple. It is designed to prevent the occurrence of subsequent fasts or festivals on days when it would be

impossible to observe them properly without infringing some precept of the law. But the point to which it is desired to direct attention is that, if it were found that Nisan 15 would, in the ordinary course, fall on a Friday, then the celebration of the First Day of the Passover was postponed to the following day. The bearing of this rule on the much debated question of the date of the Crucifixion of our Lord is obvious, and it is proposed to add a few remarks on the subject, strictly from the astronomical point of view. Assuming that the day of the Crucifixion was a Friday—though even this has been controverted—we have to find in what years within practical limits (say between A.D. 29 and A.D. 34) the date of Nisan 14, counted from first visibility of the moon, would have fallen on a Thursday or on a Friday. A number of computers have applied themselves, from time to time, to the elucidation of this problem, some uncertainty necessarily being attached to the actual day of first visibility of the moon, in any particular case. On the whole it appears, however, that, so far as astronomy can help us in the matter, the evidence available seems to point to the years A.D. 30 and A.D. 33 as being possible years, and, moreover, as being the most probable years, of those that may be considered possible on historical grounds. In A.D. 30 a new moon would possibly have been visible on the evening of March 23. As the Jewish day commenced at sunset, Nisan 1 would accordingly fall on March 24, and Nisan 14 on April 6, Thursday. But it is more probable that this moon would not have been seen until the evening of March 24, thus making Nisan 14 to occur on April 7, Friday. In A.D. 33 a new moon would pretty certainly have been visible on the evening of March 20. Nisan 1 would therefore fall on March 21, and Nisan 14 on April 3, Friday. But the year A.D. 29, which has often been quoted by writers with apparent confidence, as being the year of the Crucifixion, is an impossible one from the astronomical point of view. Nisan 14 fell in that year on either a Saturday or a Sunday, according to the lunation that may be adopted as being the Paschal lunation. It will thus be seen how inconclusive the astronomical evidence necessarily is, but, so far as it goes, it supports the supposition that the Crucifixion occurred on Nisan 14.

We have already seen that the observance on a Friday of the religious ceremonies appropriate to Nisan 15 was prohibited by rule. We now find that independent evidence points to the conclusion that the original Good Friday did not clash with the First Day of the Passover, but did coincide with the day on

which the Paschal lamb was sacrificed. It is well known that there is an apparent discrepancy between the accounts given in the Synoptic Gospels and the account given in the Fourth Gospel as to the day on which the Crucifixion took place: whether it was the First Day of the Passover (Nisan 15), or the preceding day (Nisan 14). It is suggested that—assuming Nisan 14 to have fallen on a Thursday in that year—an explanation of the apparent discrepancy may be found in the observance or non-observance of the Rabbinical rule as to Friday by different sections of the Jewish people (for instance the “rulers,” and the “common people”) at the time with which we are concerned. On the other hand, the assumption that Nisan 14 fell on a Friday—supported as it is by the astronomical calculations referred to above—accords with the Johannine account. It may be remarked, too, that the trend of modern opinion on the subject appears to be setting in favour of the date Nisan 14, rather than Nisan 15, as the day of the Crucifixion. This is, of course, quite independent of any considerations of an astronomical character, and is, after all, but a return to the view of the matter that was entertained by early Christian writers generally.

But the lengthy explanations given in this paper may reasonably be held to be a strong argument in favour of a fixed Easter—a subject that has been again brought to our notice during recent years. And really there is a good deal to be said in favour of the practical convenience of the proposal, quite independently of the complications involved in the determination of the fourteenth day of a certain artificial moon. Without having the least sympathy with the changes in the week and in the month that have been proposed, we may heartily agree that Easter Day should be a Sunday in a fixed week. But it would be undoubtedly a breaking away from the system that has been handed down to us from the early days of the Christian Church, and the prejudices of those who look with dislike on all such changes would have to be overcome. Practical unanimity between Christians of all denominations, and of all nations and languages, would be very desirable, and very difficult to secure. But any independent action that would tend to our insular isolation in such a matter would be deplorable. It is stated that the late Pope (Pius X.) was prepared to give his favourable consideration to the project. The authorities of the Orthodox Church do not appear to have expressed their views on the matter. But if the proposal ever comes within the range of practical politics it may be urged,

from the astronomical point of view, that, as there is evidence that the original Good Friday fell either on April 3 (A.D. 33), or on April 7 (A.D. 30), the change to be effected should ensure that Good Friday should be the first Friday in April. This meets both the cases mentioned above, and Easter Day would then be either the first or second Sunday in April. But alas ! "the time is out of joint." All such proposals must now, it is to be feared, be relegated to the Greek Kalends.

DISCUSSION.

The CHAIRMAN, in opening the discussion, said :—Not only is the Victoria Institute happy in hearing such a paper as we have now before us, but it is also happy in the prospect of a good discussion. We have with us this afternoon a great historian, Dr. J. K. Fotheringham, and Mr. R. Pearce, a Member of Parliament much interested in questions of the calendar, beside our Secretary, Mr. Maunder, who is well known as an Astronomer. If Dr. Fotheringham is prepared to address us we should be greatly pleased to hear him.

Dr. J. K. FOTHERINGHAM said that the paper to which they had listened was full of interest, and some of the points raised in it were new to him. Others seemed to call for a little further comment, since in the short time devoted to the paper it was difficult to explain every detail fully, and a condensed explanation was sometimes misleading. Thus on p. 153 the definition of Easter given in the English Prayer Book was said to have been handed down to us from the time of the Council of Nicæa. The Council of Nicæa did not define any rule in the matter: that arose from a later interpretation of their action. No acts of the Council were now extant, but there was a letter of the Council to the Church of Alexandria, and another letter from the Emperor Constantine to the Bishops who had not been present at the Council, from which it appeared that the Council decided that Easter was not to be observed at the same time as the Jews, but in accordance with a certain number of Christian churches that observed it rightly. Churches that had observed Easter in accordance with the Jewish practice were exhorted to alter their custom, and a list was given of Churches who were in harmony. Unhappily, so far as we can ascertain, these Churches were not all in harmony, and the rule that in the course of some centuries won its way to general acceptance was that in use in

the Church of Alexandria. A century after the Council, it was assumed that the Bishop of Alexandria had been ordered to compute the date of Easter, but there is no mention in the letter to the Bishop that he was to undertake that duty. There is a tendency among men to attribute too much definiteness to our ancestors.

Again, on p. 153, the full moon which happens upon, or next after, the 21st day of March is referred to. It was not until A.D. 1700 that any attempt was made to regulate a mid-month festival by the astronomical full moon, for the obvious reason that to ordinary observation the moon remained practically full for two or three days together. The direction, therefore, was to observe, not the full moon, but the 14th day of the month; the moon was observed when new, and was supposed to be full 14 days later. We had, therefore, no right to find fault with the use of a "mean full moon," as that expedient was practically an original one.

In A.D. 1700, however, the German Protestants resolved that Easter should be determined from the actual full moon, as computed by means of the Rudolphine Tables, drawn up by Kepler. They soon, however, give up this plan on account of its complication, and adopted the simpler rule current in the Roman Catholic Church. When the Germans gave up the real full moon the Swedes, however, adopted it, but have relinquished it since the middle of the nineteenth century. He hoped that history would not repeat itself in this particular, and that there would be no alteration in the calendar which would lead to the founding of a new astronomical sect.

On p. 169, Dr. Downing referred to the suggestion for having a fixed Easter. This was no novelty: we learned from Epiphanius, in his *Refutation of all Heresies*, that the Cappadocians kept March 25 as Easter; others, the Quartodecimans, kept it on the 14th day of the month in which the 25th of March fell; St. Martin of Dumes, a sixth century father, who wrote a *Treatise on Easter*, noted that many Gallican Bishops kept Easter on March 25, that being assumed to be the day of the spring equinox; hence Lady Day (March 25) is still taken as the quarter day. The Montanists kept Easter on the Sunday which fell on or next after April 6, and were represented as declaring that Easter might thus fall from April 6 to April 13, though in reality it could only have fallen from April 6 to April 12; perhaps they erred in their arithmetic as well as in their faith.

On p. 155, it is stated that "the year of confusion" (46 B.C.), when the Julian calendar was established, consisted of 445 days; this is the statement given by Censorinus, who is followed by all German writers, but Dion Cassius gives 422 days for the year of confusion, and he is followed by all French writers. When the speaker last investigated the subject, he had come to the conclusion that the French were right: the Roman intercalary month was 22 or 23 days, and we are told that three months were intercalated on this occasion. It is nowhere stated that Julius Caesar specifically designed that the new year should begin with a new moon; actually the new moon fell on January 2, 45 B.C.

The Julian calendar had been abused as being inaccurate, but this was undeserved. Julius Cæsar's Egyptian advisers determined the length of the year from observations of the heliacal rising of Sirius, and this was found to recur at an interval of $365\frac{1}{4}$ days exactly. The speaker felt that it had been a mistake at the time of the reformation of the calendar by Pope Gregory to fix the vernal equinox on March 21. Personally he felt very doubtful whether the Metonic Cycle was ever inscribed in characters of gold upon the walls of the Temple of Minerva.

Mr. R. PEARCE, M.P., said he felt much honoured in being invited to take part in the discussion upon Dr. Downing's able paper. His claim to speak on the subject lay in the fact that some two years ago he had brought forward a Bill for the reform of the calendar, based upon the fact that 52 weeks amounted exactly to 364 days, and that Easter Sunday could be fixed to the same date in all years; at least in Christendom, if Christendom would agree to a reasonable date. It would be of great advantage if this feast, which has been the subject of so much controversy in the past, could by common consent be fixed to one particular day. The history of the controversy was full of interest, as they had learned from the excellent paper which had been read before them that afternoon.

But Easter was observed long before the Christian era; its history went back further than either Dr. Downing or Dr. Fotheringham had indicated. Easter meant the dawn of the spring, and the determination of the vernal equinox. Easter was the same word as Esther or Ishtar, the great spring goddess of ancient Babylon; it was the same word as "East," the place of the sun-rising; and the word was similar in Hindu. The suggestion he had made for fixing

Easter would relieve them from the burdens which priestcraft had imposed and from the complications of the ecclesiastical calendar, which inflicted so much inconvenience and loss. Schoolmasters and parents wanted a fixed Easter, so that the school terms might not vary in length. The industrial classes also wished for it, as their principal holiday was taken at Whitsuntide, which depended upon Easter, and it was very inconvenient for them when they went for their holiday to Blackpool, etc., not to know beforehand what the weather would be like. But if you fixed Easter on the 1st or 2nd Sunday in April, you would please the children, the parents, the schoolmasters and the workers. But we could not have a fixed Easter because Christendom would not agree upon it. It would be of great advantage to have exactly 52 weeks in each year, and to call the remaining day a *dies non*, New Year's Day, not including it either in the week, or the month, or the quarter. This would simplify everything, as any given date in the calendar would always fall on the same day of the week, whatever the year. Of course in leap year there would have to be two extra days instead of one.

The SECRETARY then read the following notes, which had been received from the Rev. D. R. FOTHERINGHAM, F.R.A.S. :—

Page 155, line 3.—The old Roman calendar, in use before Julius Cæsar, was not lunar, except in the sense that all “months” are approximate lunations. It was quite an irregular and unscientific measure of time. No doubt the “Nones” and “Ides” are relics of the observance of the first quarter and the full moon. But the connexion between the moon and the calendar had long been lost, and was quite irrecoverable.

Dr. Downing is quite right in speaking of the introduction of the Julian calendar as one of the most remarkable achievements of that most remarkable man. It might have been noted in this connexion that, as the calendar came from Egypt, it was doubtless founded on the Egyptian calendar of *exactly* 365 days, without leap year. This calendar had been in use for more than four thousand years. And observations of Sothis (or Sirius) that had been carried on for nearly as long, revealed the error of a day in every fourth year. Hence the clever device of a leap year.

Page 155, line 11.—Julius Cæsar was not the only great Imperialist to select a new moon for a new epoch. Sir Edward Grey chose a new moon—being also a Friday—for the proclamation of the new

Sultan of Egypt last year. Doubtless the choice was intentional, a happy augury for the new reign!

Page 157, line 7.—I think we are all inclined to agree now with Simon Newcomb. The Julian calendar is the *only* calendar that has ever been in use throughout all Christendom, and it was so in use for more than a thousand years. It is a great pity that any change was ever made. As a matter of practical convenience the Julian calendar is better than the Gregorian; and if slightly further from the tropical year, it is nearer to the sidereal year. Let us hope the orthodox Russians will maintain it!

Page 158, line 5 (Jan. 1, A.D. 1).—There was confusion in the working of the calendar for some years. The Romans reckoned the fourth year (a leap year) inclusively, and thus made an average year of $365\frac{1}{3}$ days. Too many leap-year days having thus been accidentally inserted in the calendar, the Emperor Augustus discontinued the observance of leap year altogether for some time in order to restore the calendar to Julius Cæsar's intention. The result is that just over the period of the Christian era there is some discrepancy between the actual dates in use and the theoretical calendar dates.

There was an omission of two days in the fourth century, corresponding to the eleven days of 1752.

Page 166, line 14.—The Jews had a very simple precaution, and it worked very easily and satisfactorily. The average length of a lunation being *a little more than* $29\frac{1}{2}$ days, the rule was that no month could have less than 29 days, nor more than 30. Twentynines and thirties would come in approximate alternation, the thirties being a little more frequent. But two months of twenty-nine were not allowed to come together, nor *more than two* of thirty.

In practice it was only necessary to look for the crescent on *one* evening. If the crescent were seen then, the month would begin at once. If not, it would begin the next evening.

Page 168, line 32.—I think Dr. Downing is unquestionably right in rejecting the year 29. The weight of astronomical testimony seems to be as decisive against it as (in all the complexity of the circumstances) such testimony can possibly be made.

When it is added that the supporters of this date not only go against the available astronomical evidence, but are driven further to suppose an Easter *before the Vernal Equinox*, it would seem that the date must be abandoned.

The Latin Fathers (yet not the Greek) often give the year 29, yet always associate it with the date March 25, which was certainly not the true date. It seems to have been a common practice to put Church festivals on the 24th or 25th of the month—the eighth day before the Kalends—and three of our quarter days are so kept still. Now when once they had got the Crucifixion on March 25, they almost necessarily gave the year 29. For it was easy to see by the Julian calendar that in the year 29 March 25 was a Friday. The assumption of the wrong day led to the adoption of the wrong year. It is a pity that the error still persists in some distinguished quarters.

Page 170, end.—I should be sorry to see a fixed Easter. Our clocks and almanacs are but crutches for the use of an enfeebled age. The true clock and the true almanac are on the face of the sky. It is better to follow the sun and moon than the figures of a dial or the printed pages of a book.

In some of the Greek Churches it is the custom after nightfall on Good Friday to carry the Host in procession through the churchyard. The full moon shines on that procession even as the full moon shone on another procession, small and sad: when Nicodemus and Joseph of Arimathea, the faithful women and the Mother of our Lord bore His sacred Body from Calvary to the grave. For two nights the full moon watched over the sleeping Christ. It would be lamentable in this age of dulness to break the connexion between our astronomy and our Christianity, between our science and our faith, “to make a cockney holiday”!

Mr. WALTER MAUNDER said that Mr. Fotheringham had reminded them of that which they should always remember, *viz.*, “the true clock and the true almanac are on the face of the sky.” Mr. Pearce had connected Easter with the Babylonian goddess Ishtar. There were Babylonian monuments which preserved the memory of a very simple method in use 6,000 years ago for identifying the new moon of springtime by a simple reference to the face of the sky. In the British Museum there were scores of little stone pillars, commonly known as “boundary stones,” and on the top of these were three astronomical symbols—a new moon lying on its back, together with two stars. 6,000 years ago, when the new moon was seen setting together with the twin stars, Castor and Pollux, then the observers knew that the month of the spring equinox had begun. If the

moon set with the twin stars on the first evening of the month, or the second evening of the month, then the year would contain twelve months. If it was not till the third evening that it set near Castor and Pollux, the year would contain thirteen months.

This was a very simple observation, and it was sufficient for the needs of the ancient world for thousands of years. But then they did not try to introduce an artificial regularity into either the month or the year. It was very easy to assume that if we had been present at the Creation we could have arranged things much better than they were now ; we could have made the month exactly thirty days and the year exactly twelve months ; but as things actually were, the month was not an exact number of days or of weeks, and the year was not an exact number of days, weeks or months, and by no possible device could we transform them, so as to make them commensurate.

But there was an advantage about the fact that the motions of the heavenly bodies were irregular and incommensurable. Mr. Pearce had said that we could save millions of pounds if we could make a more symmetrical calendar. Supposing that were true, which was much to be doubted, what was that saving when compared with the immense advantage to mankind which had arisen from the irregularities of the movements of the heavenly bodies ? It was no advantage to any particular man to make things so easy for him that he never had to use his brains ; it would have been no advantage to the race of men if God had given them no problems to work out. The problems presented by the irregularities of the movements of the heavenly bodies had given rise to the science of mathematics, and upon mathematics all our mechanical science, our physical science, our engineering, were built ; that is to say, the whole body of our modern civilization.

Mr. H. P. HOLLIS called attention to the recurrence of any particular day of the year as Easter Day and the intervals between such successive recurrences. As an example, in this year April 4 is Easter Sunday. Easter has not happened on that day since 1858, fifty-seven years ago, but that particular date will be Easter Day in 1920, five years hence, and again in 1926, six years later. It is clear why an occurrence of the same date may happen after five years, if those five years include two leap years, for in that case the date (April 4) will again be a Sunday, so that one condition is satisfied.

The second condition is that the Paschal Full Moon should again be in the week preceding April 4, and after five years the date of the Paschal Full Moon is, in general, shifted only by four or five days, so that being in the week preceding April 4, in the one year, it is very likely to be so five years later. Similar reasoning applies to the six years interval, but the chance of a recurrence of date after this interval is less likely, because the date of the Paschal Full Moon is, in general, six days earlier than it was six years previously. On the other hand, an eleven-year interval is very frequent, because, in the first place, after an eleven-year period which includes three leap years, the dates of the calendar recur on the same days of the week, and secondly, as may be seen from one of the Tables in the Prayer Book, an addition of eleven to the golden number in general causes the Paschal Full Moon to be ante-dated by only one day, so that the chance of a recurrence of Easter on any date after eleven years is large. Remembering how often a period of nineteen years occurs in lunar matters, it might be surmised that there should be sometimes an interval of this length between occurrences of the same date for Easter, but obviously this cannot be so, for neither 3, 4 nor 5 added to 19, because of leap years, gives a total divisible by 7, so that dates do not recur on the same days of the week after a nineteen-year period. On the other hand 57 years is a rather frequent interval, the number being a multiple of 19. This may happen, as in the present case (1858-1915), because the non-occurrence of leap year at centennial years, as in 1900, leaves only 13 leap years in the period, and hence dates fall on the same days of the week in both terminal years.

Mr. Hollis added that this point of view might be trivial and unimportant, but it was not without interest to those who dabbled in figures.

Mr. M. L. ROUSE said :—The Lord distinctly foretold that he would be “three days and three nights in the heart of the earth,” even as Jonah had spent “three days and three nights” miraculously beneath the sea ; and I cannot see how this could have been fulfilled unless he was put to death on a Thursday. Now John records that the Lord Jesus arrived at Bethany “six days before the Passover” (John xii, 1), which means six before the 15th of Nisan when the passover lamb was eaten, not six before the 14th, when it was killed, which was called “the preparation of the passover”

(ch. xix. 13, etc.); nor must the "six days" be reckoned as five, else there will not be found room for all the days afterwards mentioned. Therefore He reached that village home on the 9th of Nisan; and that must have been a Sabbath day, else He would have had to travel either to Bethany or to Jericho on a Sabbath day, which was contrary to a custom that He seems to have acknowledged (Acts i, 12). He therefore entered Jerusalem on the 10th of Nisan—the city in which He was to be sacrificed, on the very day that the passover lamb was shut up in the pen of its doom (Exodus xii, 3, 6); and that was a Sunday, as indeed the tradition of the Church holds it to be. On that day, as Mark tells us (ch. xi. 11), after "looking round about" upon the state of things in the Temple, He returned to Bethany. On the next day, Nisan 11, a Monday, He cleared the Temple of its traffickers, and, after answering objectors withdrew; on the next, Nisan 12, a Tuesday, He told the parable of the husbandmen, answered subtle questions and propounded one, gave a chain of prophecy to His disciples, and then said, "After two days is the feast of the passover" (Matthew xxvi, 2). That was, therefore, the evening beginning Nisan 13, which, after midnight, became a Wednesday; and on it we find recorded the feast and anointing at Bethany, the bargain of the betrayer, and the command to make ready a passover supper for Jesus and His disciples (vv. 3, 6, and 14 ff.). To this they sat down on the evening that ushered in the 14th of Nisan (v. 17), which after midnight became a Thursday; and on the afternoon of that Thursday the Lord suffered death [yielding up His spirit shortly after the ninth hour, at the very time when the passover sacrifice was by Divine decree usually made (Exodus xii, 6 marg.)].

The CHAIRMAN said, I rise to propose a hearty vote of thanks to Dr. Downing for his valuable lecture.

On page 165 of the paper, I demur to the statement that the date A.D. 29 is an impossible one for the Crucifixion from an astronomical point of view. This question depends upon the visibility of the new moon to the naked eye on the evening of March 4, A.D. 29, at Jerusalem. If it could have been seen, then that year must have been a possible one for the Crucifixion.*

* This subject has been discussed at some length recently, see *Monthly Notices of the Royal Astronomical Society*, May, 1910, on "The Smallest

It so happens that the first visibility of the new moon is not a matter of general importance to modern astronomers, and few observations have been made with that end in view. Dr. J. K. Fotheringham has, however, propounded a rough empirical rule, based on the records of 76 observations (six being of the old moon), that the new moon is never to be seen by the naked eye when its angular distance from the sun is less than 12 degrees, and then only when it is in the most favourable direction.

An old moon was, however, observed (among the above 76) when only 9.2 degrees from the rising sun and not in the most favourable direction. Dr. Fotheringham, however, dismisses this observation with the remark that it must not be considered, because the atmosphere is clearer at dawn than at sunset. But every practical astronomical observer knows that the clearness of the atmosphere at sunset varies immensely on different evenings which are cloudless, and this particularly affects the visibility of faintly illuminated celestial objects near the horizon.

Jerusalem is at a lower latitude than were the places at which the 76 observations were taken; consequently darkness comes on more quickly after sunset, and faintly illuminated heavenly bodies are more easily seen. Also it must be remembered that Jerusalem is about 2,600 feet above the sea; celestial objects near the horizon can there be seen with greater clearness than from the lower levels at which the 76 observations were taken, because there is a less density of air to look through.

On February 10, 1910, Mr. D. W. Horner, a well-known observer, and others at Tonbridge, saw the new moon with the naked eye at an angular distance of only about 10 degrees from the setting sun, the direction not being very favourable.

Visible Phase of the Moon," p. 530, by J. K. Fotheringham, M.A., D.Litt.; also a paper on the same subject in *The Journal of the British Astronomical Association*, May and June, 1911, by E. W. Maunder, F.R.A.S. Also *Journal of Theological Studies*, "Astronomical Evidence for the Date of the Crucifixion," October, 1910, p. 120, by J. K. Fotheringham. Various articles in *The Churchman* on the date of the Crucifixion, April, 1910, to November, 1912, by Rev. D. R. Fotheringham, J. K. Fotheringham, E. W. Maunder, F.R.A.S., Lt.-Col. Mackinlay, and Mr. Bothamley. Also *The Observatory*, April, 1911, p. 162, and *The English Mechanic*, May 5, 1911, p. 308. Letters by D. W. Horner.

The new moon on March 4, A.D. 29, was at about 8·8 degrees angular distance from the setting sun, but in a somewhat more favourable direction for visibility than was the one seen recently. In March, A.D. 29, it was thus only a little more difficult to see the new moon than it was at Tonbridge, where the conditions due to latitude, direction of the moon with regard to the sun, and the altitude of the observer were less favourable.

Would it be scientific to assert that no one could live beyond the age of 80, if it were found that no one out of 76 selected lives had attained that age? If just afterwards someone was found in an unhealthy place to be certainly (say) 85 years of age, could we not imagine that someone else in a more healthy place might even exceed that age a little?

The simile is a fair one to make: uncertainty of visibility and uncertainty of life may well be compared; in each case a very extended amount of data should be obtained before we venture to assert the impossibility of visibility or of life.

With the present scanty data at our disposal it is therefore rash to assert that the new moon of March 4, A.D. 29, was not visible to the naked eye at Jerusalem; in other words, A.D. 29 cannot be considered an impossible year for the Crucifixion from an astronomical point of view.

Much more can be said on this subject, but want of space prevents: so I shall finish as I began by asking you to accord a sincere vote of thanks to Dr. Downing for his instructive and interesting paper.

Mr. JOSEPH GRAHAM proposed a hearty vote of thanks to the visitors, Dr. J. K. Fotheringham, Mr. R. Pearce, M.P., and Mr. H. P. Hollis, whose comments had added so much to the interest and value of the discussion. Also to the Rev. D. R. Fotheringham for his letter.

Both votes were then put to the Meeting and were carried by acclamation.

The Meeting adjourned at 6.10 p.m.

567TH ORDINARY GENERAL MEETING,
HELD IN THE SMALL HALL, THE CENTRAL HALL,
WESTMINSTER, ON MONDAY, APRIL 12TH, 1915,
AT 4.30 P.M.

PROFESSOR D. S. MARGOLIOUTH, D.LITT., IN THE CHAIR.

The Minutes of the preceding Meeting were read and confirmed.

The SECRETARY announced the election of the Rev. D. H. D. Wilkinson as an Associate of the Institute.

The CHAIRMAN called upon the Secretary to read the paper for the Meeting on "Astronomical Allusions in Sacred Books of the East," on behalf of the authoress, Mrs. Walter Maunder.

*ASTRONOMICAL ALLUSIONS IN SACRED BOOKS OF
THE EAST.* By Mrs. WALTER MAUNDER.

I AM no Oriental scholar, and of the books with which I deal I can read no one in the language in which it was written. Nevertheless, within the narrow limits that I have set myself, this disability may even be a recommendation; for, since I accept the best translations available and cannot amend them, they will not be affected by any bias and preconceived notion on my part. Further, I leave on one side all issues, no matter what their interest and importance, which do not depend on astronomy or on considerations of time and place deduced from astronomy.

The heavenly bodies were the same for our forefathers as they are for us; we can make the self-same simple first observations of the sun, moon and stars as they did; so far there is no difference between the astronomy of primitive times and that of to-day. But there is a great difference between our deductive powers and those of the first observers. The laws governing the relations between the earth and the heavenly bodies are far-reaching and precise, and we have gradually

gained some knowledge of them ; so that, astronomically, we can both postdict and predict these relations, and if we alter our time and place we can restate with very considerable accuracy the corresponding changes in the sky.

But the ancients had not our experience and knowledge, and therefore had not our power of accurate astronomical computation. What they themselves had seen, that they could describe ; but they could not deduce what their ancestors should have seen in different circumstances of time and place. Unless then their ancestors had handed down positive records of their experiences, their descendants could not infer what those must have been.

The first observations of astronomy were very simple, and were for the purpose of determining direction or of measuring time. They consisted in noting the positions of the sun, moon and stars with respect to each other, and especially with respect to the earth, that is to the horizon. The mean place of rising for the sun marks the east ; its mean place of setting, the west ; the south is indicated by the direction in which it "culminates," that is reaches its greatest height ; the north by the point in the heavens round which the circumpolar stars circle unceasingly. In time, the heavenly bodies measure off the day, the month, the year, and the succession of years—they furnish us with the calendar ; but calendars may be devised to depend upon the sun alone, or upon the sun with the stars, or upon the sun with the moon. Calendars therefore differ in type, and even when of the same type, they may differ in detail. These differences constitute strong lines of demarcation between races and religions ; indeed, the adoption of different calendars has brought about bitter schisms, even between men professing the same faith, or derived from the same stock. Therefore astronomy in this particular application to calendar-making frequently affords an all-important criterion as to the date, place, and circumstances of a document under examination.

The literature with which I deal comes under two heads—the Persian sacred books, and the Jewish extra-canonical books near the time of the Christian era. I have read and studied practically the whole of the Persian writings that have been translated under the editorship of Max Müller in the series of "The Sacred Books of the East," and such of the Jewish "pseudepigraphical" books as have been translated into English. Of this great mass of literature, only a few books have yielded any appreciable amount of material for my purpose. These are :—in the Persian, the first two Fargards of

the Vendidad, and the Bundahis,* and for purposes of illustration or elucidation I have referred to later works, The Bahman Yast, Dina-i Mainog-i Khirad, or "The Opinions of the Spirit of Wisdom," and Manuskihar; in the Jewish Pseudepigrapha, IV Ezra, the Book of Jubilees and the Slavonic and Ethiopic Books of Enoch. Other books, both Jewish and Persian, do indeed yield a few slight astronomical references, but nothing of sufficient importance for my present purpose to warrant its inclusion within the narrow limits of this paper.

THE VENDIDAD.

The Vendidad, or the Anti-Demoniac Law, is part of the Avesta proper. It does not concern us here to discuss the date of it as a whole; its eminent editor, the late James Darmesteter, concludes that it has come down to us substantially from the Achæmenian† kings,—in round numbers its date may be put as about the 5th or 6th century B.C. The major part of it is concerned with ceremonial laws for the conduct of the faithful in the matters of their daily life or in their worship, sickness, cleansing, or death. Twenty out of its twenty-two Fargards or chapters may be likened indeed to a Mazdayasnian Leviticus, but in these there is little or no astronomical allusion, and they do not concern us here. But the first two Fargards might find

* The VIIIth Yast, known as the Tir or Tistar Yast, is of peculiar astronomical interest, but I have discussed it elsewhere. See *The Observatory*, vol. xxxv, pp. 393 and 438, and vol. xxxvi, p. 136, "The Zoroastrian Star Champions." Also *Journal of the British Astronomical Association*, vol. xxiii, p. 425, "The Four Star Champions of Iran."

† It may be convenient to note here that Cyrus the Great took Babylon 538 B.C.; Darius, the son of Hystaspes, who, like Cyrus, was of the Achæmenian race, acceded to the throne of Persia, 521 B.C. Alexander the Great overthrew Darius Codomannus, the last of the Achæmenian kings, 330 B.C. Alexander died 323 B.C., and one of his generals, Seleucus Nicator, founded the SELEUCID dynasty and established his authority over all the eastern conquests of Alexander, 312 B.C. During the reign of Antiochus II., the third of the Seleucid line, a Parthian prince Arsaces made himself independent, and was succeeded by his brother, Arsaces II., who about 248 B.C. founded the ASKANIAN or ARSACID monarchy of independent Parthia. The Parthian Empire increased in power until it had absorbed the whole of the ancient Persian Empire east of the Euphrates, and was strong enough to oppose successfully the power of Rome. About A.D. 225, the Persians threw off the Parthian yoke, and the second Persian Empire was founded under the SASSANIAN Dynasty. This last was overthrown by the Arabs at the battle of Nahavend in A.D. 639.

their analogy rather in the early chapters of Genesis. Darmesteter says of them: "The first two chapters deal with mythical matter, without any direct connection with the general object of the Vendidad, and are remnants of an old epic and cosmogonic literature. . . . Although there was no particular reason for placing them in the Vendidad, as soon as they were admitted into it, they were put at the beginning, because they referred to the first ages of the world." It is in these two chapters that we find certain astronomical data that, in my opinion, preclude the appropriateness of the word "mythical" in connection with them.

The first Fargard of the Vendidad gives a description of the sixteen good lands created by Ahura Mazda: for

"(1) Ahura Mazda spake unto Spitama Zarathustra, saying:

(2) I have made every land dear to its dwellers, even though it had no charms whatever in it: had I not made every land dear to its dwellers, even though it had no charms whatever in it, then the whole living world would have invaded the Airyana Vaëgo."

The following is a list of these sixteen good lands:—

1. Airyana Vaëgo, by the good river Daitya.
2. Sughdha. That is Sogdiana.
3. "Strong, holy Mauru." That is Merv.
4. "Beautiful Bakhdhi with high-lifted banners." That is Balkh.
5. Nisaya that lies between Mouru and Bakhdhi." Unidentified.
6. Haroyu. That is Herat.
7. "Vaekereta, of the evil shadows." Unidentified but possibly Kabul.
8. "Urva of the rich pastures." Unidentified.
9. "Khñenta in Vehrkana." That is the river Gorgan in Hyrcania.
10. "The beautiful Harahvaiti." That is Harut.
11. "Bright glorious Haetumant." That is Helمند.
12. "Ragha of the three Races." Rāi or Rhaghes.
13. "Strong, holy Kakhra." Unidentified.
14. "The four-cornered Varena." Unidentified.
15. "The Seven Rivers." That is the Panjab.
16. "The land by the floods of the Rangha, where people live without a head." Unidentified, though the Commentary says Roman Mesopotamia.

Darmesteter says:—

"Of these sixteen lands there are certainly nine which have really existed, and of which we know of the geographical position, as we

are able to follow their names from the records of the Achæmenian kings or the works of classical writers down to the map of modern Iran."

Of five of the remaining six, the Pahlavi commentary suggests identifications; but, without discussing these, we may note that the complete region indicated extends from Sogdiana by the Aral Sea on the north to the Arabian Sea on the south, and from the river Euphrates on the west to the river Sutlej on the east. This was the region wherein the Zoroastrian faith attained its widest diffusion; it was the region occupied by the Parthian Empire at its greatest extent.

But the first of the sixteen good lands, "the best of all," does not lie within it. Darmesteter says:—

"The first land, the *Airyana Vaego* by the *Vanguhi Daitya*, remained to the last a mythical region. It was originally the abode of Yima and of the righteous, that is to say, a particular form of Paradise."

I hope to be able to convince you that Iran-veg is no "mythical" region; that its position on the earth is, of all the sixteen "good lands," the best defined astronomically; that its place is at least as sure as the Panjab.

The description of Iran-veg in the *Fargard* is as follows:—

"(3) The first of the good land and countries which I, Ahura Mazda, created, was the *Airyana Vaego*, by the good river *Daitya*.

"Thereupon came *Angra Mainyu*, who is all death, and he counter-created by his witchcraft the serpent in the river and winter, a work of the *Daevas*.

"(4) There are ten winter months there, two summer months; and those are cold for the waters, cold for the earth, cold for the trees. Winter falls there, with the worst of its plagues."

And the *Vendidad Sadah*, or Liturgy, adds here: "There reigns the core and heart of winter."

Late tradition, in the time of the Sassanians, placed Iran-Veg in the mountains of Georgia, and identified the good river *Daitya* with the *Araxes*. But it is quite evident to everyone that nowhere in Georgia is it true that there are "ten winter months there, two summer months;" it is evident to-day, it was quite as evident to the Persians under the Achæmenians or the Arsacides, for the *Vendidad Sadah* comments that:

"It is known that there are seven months of summer and five of winter."

and the Bundahis elaborates the same proportion of the seasons in its XXVth chapter. But this proportion of the winter to summer does hold good for the region within the Arctic Circle ; the records of Nansen and Peary will bear me out here. And the Persians, as I hope I have made clear, could neither guess nor calculate the climatic conditions of regions so far removed from them in latitude. Since then, they could neither imagine nor calculate the conditions of the polar regions : because they had themselves no experience of them : it must be a true record that has been handed down to them from their remote ancestors, and Iran-Veg, the first and best of the good lands of Ahura Mazda, was a real land, placed somewhere between the latitudes of 67° and 90° north.

But this is not the only information that we are given in the Vendidad about Iran-Veg. In the Second Fargard, Zarathustra asked Ahura Mazda :—

“Who was the first mortal before myself, Zarathustra, with whom thou, Ahura Mazda, didst converse ? And Ahura Mazda answered :

“The fair Yima, the great Shepherd . . . unto him, O Zarathustra, I, Ahura Mazda, spake, saying : ‘Well, fair Yima, son of Vivanghat, be thou the preacher and the bearer of my law !’”

This Yima is the Yama of the Vedas ; his name and parentage are the same ; he himself therefore dates from before the fission of the Japhetic† race into Iranian and Indian ; he is among the common ancestors of both. His father’s name is Vivanghat

* This is the form in which the name of this great teacher is given in the Avesta, and scholars interpret it as meaning “old white camel.” The Greeks wrote the name Zoroaster, and explained it as meaning “living star.” The later Persian writers contract it to Zaratusht or Zirdaust. I am not concerned in this paper with the tenets of Zoroastrianism, and where these differed from the Magianism which preceded his mission. Therefore when I speak of Magian doctrines, I am using the term loosely, not as distinguishing between the doctrine of Zoroaster and that which preceded it. I refer to the Magi, originally a Median tribe, as representing the priestly caste, just as we speak of the Chaldeans, sometimes as a distinct nation, sometimes as the priestly caste of Babylon. Just as Zaratusht is a later form of Zarathustra, so Iran-Veg is a later form of the Avestan Airyano Vaego.

† Throughout this paper, I use the terms “Japhetic,” “Semitic” and “Hamitic,” simply as a rough ethnological division. I am debarred from using the term “Aryan” in any wide sense, since this is the very name that the ancient Persians arrogated to their own race peculiarly.

in Iranian, *Vivasvat* in Indian, meaning "the bright one;" his own name Yima or Yama is supposed to mean "*twin*." It is often assumed that he and the legends about him are equally mythical, woven from the wonderings of primitive peoples about the dawn, the day, and the light. But of him, who became known throughout the ages as Yima the Glorious—or Jamshed as he is named by the later Persian poets—two things are told us, which are certainly not mythical, characteristic of the land in which he dwelt. None but an actual observer could have transmitted to his descendants the strange relations between summer and winter, between day and night, that prevailed in Iran-Veg.

Yima, then, is one of the very early heroes of the Japhetic race; he is common both to Indian and Iranian. It does not lie with me to speculate what relation he bears to *our* own branch of the Japhetic family, whether he was our direct ancestor, or only a collateral. But, as already quoted from the Fargard, he was charged by Ahura Mazda to be the preacher and bearer of his law. Yima refused, not in contempt, but because he had neither the calling nor the knowledge, and offered instead to nourish, rule, and watch over his world.

"There shall be, while I am king, neither cold wind nor hot wind, neither disease nor death."

So Ahura Mazda brought him a golden ring and a poniard inlaid with gold, and

"Behold here Yima bears royal sway"

"Thus under the sway of Yima, three hundred winters passed away, and the earth was replenished with flocks and herds, with men and dogs and birds and with red blazing fires, and there was no more room for flocks, herds and men"

"Then Yima stepped forward, towards the luminous space, southwards, to meet the sun, and he pressed the earth with the golden ring, and bored it with the poniard and Yima made the earth grow larger by one-third than it was before."

This was repeated twice at intervals of three hundred years, so that he enlarged his dominions threefold in his long reign.

Here we have described the three migrations of Yima from his farthest northerly camp, southward, though we have no indication given of what his southernmost limit was. The three indications of his direction—"towards the luminous space," "southwards," "to meet the sun"—are but three ways

of saying the same thing; for a traveller in the polar regions, moving away from the pole, must move southward, "towards the luminous space" "to meet the sun."

The Fargard then goes on to tell of the meeting in Iran-Veg of the celestial gods, called by Ahura Mazda, and the meeting of the excellent mortals, summoned by Yima the good Shepherd, when Ahura Mazda said:—

"O fair Yima, son of Vivanghat! Upon the material world the fatal winters are going to fall, that shall bring the fierce foul frost; upon the material world the fatal winters are going to fall, that shall make snow-flakes fall thick, even an *aredvi* deep on the highest tops of mountains. And all the three sorts of beasts shall perish, those that live in the wilderness, and those that live on the tops of the mountains, and those that live in the bosom of the dale under the shelter of the stables."

To guard against these fatal winters,* Ahura Mazda directed Yim to make a *Var* or enclosure, known in late mythology as the *Var-Gam-kard*, or the "Var made by Yim." This Var was to be a square, long as a riding ground on every side, to be an abode for men and a fold for flocks; and to it were brought the seeds of men and women, of the greatest, best and finest kinds, and of cattle and of every kind of tree and fruit. Then "that Var he sealed up with the golden ring, and he made a door, and a window, self-shining within."

Then:—

"O Maker of the material world, thou Holy One! What (lights are there to give light) in the Vāra which Yima made?"

"Ahura Mazda answered: 'There are uncreated lights and created lights. There, the stars, the moon, and the sun are only once (a year) seen to rise and set, and a year seems only as a day.'"

Here is the second great peculiarity of Iran-Veg, and it is significant that in the description given in a later source, the *Mainyo-i-khard*, whose author quoted freely from the Vendidad, there is no mention of this condition of the year and the day

* The Pahlavi Commentary gives as its version for the word "*winters*," "*Malkosan*," which is the plural of the Aramaic word "*Malkos*," *rain*. This Malkos entered the Iranian mythology and became naturalised there, but being mistaken for a proper name, became that of a demon, who by witchcraft will let loose a furious winter on the earth to destroy it.

being the same—a condition peculiar to the polar regions. As we have seen, the Vendidad Sadah or Liturgy pointed out that the proportion of ten months winter to two months summer was incorrect, as far as they knew, for their own climate. But the proportion was, as they knew, dependent, to some extent, on the latitude or the surroundings of a locality, and so might hold good for Iran-Veg within the limits of permissible exaggeration. But nowhere between Sogdiana and the Arabian Sea was there to be perceived any difference in the number of days in a year, in the number of times that the sun and moon and stars rise and set. It was so wholly unintelligible to later writers that we know of no comment or explanation, even where the passage from the Vendidad is freely paraphrased.

But it cannot be mere chance, mere invention, which gives two independent astronomical conditions, true for the polar regions, and true only for them.*

Two deductions, therefore, we must make:—

First, that Iran-Veg was a real and not a mythical place. Primarily it was situated within the Arctic Circle of the earth.

“They say the Lion and the Lizard keep
The courts where Jamshyd gloried and drank deep,”

but in this, they say wrong. The present guardians of the Var of Jamshed are most certainly not the lion or the lizard, but perhaps the seal and the polar bear.

And secondly, if Iran-Veg was an actual place, so Jamshed or Yim was really a man, for some man must have observed these astronomical facts thus preserved by his successors. How he or his ancestors reached a spot so far north as to be within the

* Of course it is only at the very pole itself that the year and the day coincide in length, and even for the pole the description of the stars and moon rising and setting once in the year is not correct, for the moon rises thirteen times, the stars not at all. But the mis-statement is after all, from the observer's point of view, but slight. That which must have greatly impressed the wanderers who first penetrated far within the Arctic Circle was the fact that the number of the days in the year varied. Till they reached that region, from one sunrise to the next, or from one sunset to the next, was an invariable measure of time. After they passed the Arctic Circle, the further they got north, the more monstrous became the length of the midsummer day, the more monstrous the length of the midwinter night, until it would require no great imagination to conclude that a place might be reached where the summer was all day, the winter all night, each of them half the year. Latitudes of 25° to 45° would never suggest that such a condition of things could occur anywhere.

polar regions, no record has come down to us ; but there he was most assuredly, some thousands of years ago, at a date before the Iranian people split off from their Indian brothers. From that far northern spot, he migrated south, and the record of the peculiar astronomical conditions of his home in the far north were embodied in the first two Fargards of the Vendidad, which took its present form probably about the time of Darius Hystaspis. The southern limit of his migrations was probably to the north of Sogdiana, which lies between the Sir and Amu Darias, rivers flowing westward into the Aral Sea.

Forgive me if I labour this point, for it is of the utmost importance. We have in these two Fargards two independent astronomical conditions recorded, conditions that hold good only for the polar regions, conditions which, in that early state of society, it was not possible for the rude dwellers in temperate and tropical zones to have inferred from their own experiences. Here we have preserved in these Fargards something that was by no means mythical ; actual men must have penetrated far towards the pole, and have for themselves observed the two months summer and the ten months winter, the six months day and the six months night, which prevailed there and nowhere else, and have handed them down to their posterity. No doubt, as the tradition was handed down from generation to generation, it received elaboration and ornament, but its nucleus was an actual fact of experience by real men, and was preserved unaltered. But by Zarathustra's time, upon the actual Iran-Veg, "the best of the good lands," not one alone but two or more thousands of fierce, foul winters had fallen ; it was buried under snow and ice ; no danger now that "the whole living world would invade the Airyana Vaego." Nevertheless, men remembered that it was in the direction of Ataropatakan, that is, towards the north. Yim's enclosure was the abode of the righteous, and since obviously the righteous in the flesh were not living there, they must be the righteous dead. Yim's enclosure became a heaven ; it was in the heavens,—in the northern heavens.

Now the Magi would not, of themselves, have conceived that the northern heavens were the abode of the righteous, for the north, to them, was essentially evil, the home of the wicked Daevas, in other words, hell. One of the later writers, Manuskihar, is very explicit :

"Three places, collectively, are called hell, which is northerly, descending, and underneath this earth, even unto the utmost

declivity of the sky ; and its gate is in the earth, a place of the northern quarter, and is called the *Arezur* ridge."

and the *Bundahis* says :

"The *Arezur* ridge (of the *Alburz* mountains) is a summit at the gate of hell where they always hold the concourse of the demons."*

By piecing together the various information given from the time of *Zarathustra* onward, the conception presented to my mind is this :—When *Iran-Veg* was no longer recognized as on this earth, it was believed to be that circular portion of the sky defined by the circumpolar stars, namely those that never rise or set. The rampart of this enclosure was *Haptok-ring*, the Persian name for the seven stars of the Plough. The rampart of the earth was *Mt. Alburz*, lying all round its horizon, and the sweep of the seven Plough stars at their lowest touched *Mt. Alburz* at its most northerly point—the ridge of *Arezur*, which was the gate of hell. Hell was, I judge, a reflection of the circumpolar heavens, but hanging below the northern horizon of the earth. Earth, heaven and hell, all touched at the *Arezur* ridge in the extreme north.

But there is a very pretty astronomical idea brought out in connection with the function of the seven Plough stars as a bulwark against an invasion from hell, for in the "*Opinions of the Spirit of Wisdom*" (written, perhaps, about the fifth or sixth century A.D.) it says that *Haptok-ring*,

"with 99,999 guardian spirits of the righteous, is intrusted with the gate and passage of hell, for the keeping back of those 99, 999 demons and fiends, witches and wizards, who are in opposition to the sphere and constellations. Its motion also is round about hell ; and its special business is this, as it holds the twelve signs of the zodiac by the hand, in *their* proper going and coming. And those twelve constellations also proceed in like manner by the power and help of *Haptok-ring* ; and every single constellation when it comes in at *Alburz* holds to *Haptok-ring* by the hand, and begs protection from *Haptok-ring*" (*Mkh. XLIX. 15-21*).

It is evident that the Plough stars do indicate to any careful observer whereabouts the various signs of the zodiac are, even

* I should like here to point out that the fourfold heaven idea, current in the time of the *Bundahis* and later was, astronomically, faulty. For the faithful, on death, were escorted, first to the star station, then to the moon station, then to the sun station, and lastly to the endless light, so that the stars were supposed to be closer to the earth than the sun ; closer indeed than the moon.

when these are below the horizon. The heavens move in one piece, and Haptok-ring, above the horizon always, is an index to the revolution of the whole sphere.

But I beg you to bear in mind these Iranian ideas that, not only the primeval "best land of all" with its "enclosure," but also heaven and hell are both in the extreme north, and that the seven Plough stars rule there in the heavens above.

The proverb has it: "There is more life in a single grain of wheat than in a whole bushel of chaff"; and though my grain of wheat is very small, it has real life in it. And the reality is this: sometime in the long past a hero of the Japhetic branch of the human family did establish his encampment somewhere within the polar regions, and so described the peculiar polar conditions of summer and winter, of day and night, that it precludes their being the product of imagination. From that encampment in the far north the Indian and Iranian branches (not yet separated) of the Japhetic family came south, but the memory of the lost good land in the far north remained with the Iranians, and gave rise to their peculiar and inconsistent ideas of the location of heaven and hell.

And these traditions are Japhetic, and Japhetic only. When Zarathustra, or someone in Zarathustra's name, sang the Far-gards, he was neither inventing his tale nor borrowing it from Assyria, Babylon, Israel, or Egypt. These traditions came through the family of Japhet, not from those of Shem or Ham. Neither of these two great families has traditions that I know of, which point back to a home within the polar regions.

There is yet another tradition of a particular latitude in that trek from the far north before the Iranians entered known lands. In the XXVth chapter of the Bundahis it says:

"The summer day is as much as two of the shortest winter days, *and* the winter night is as much as two of the shortest summer nights. The summer day is twelve Hasars, the night six Hasars, the winter night is twelve Hasars, the day six; a Hasar *being* a measure of time *and*, in like manner, of land."

This relation of day to night at the solstices defines the latitude with some particularity, but it is a latitude farther north than any Iranian land, farther north than Sogdiana, the second of the "good lands." The man who recorded this astronomical relation must have lived as far north as 49° latitude; he must have lived before the Iranian trek had reached Sogdiana; perhaps it may represent the southern limit of Yim's migrations. But this tradition of the relation of day to night in north lati-

tude 49° is—like that of the polar regions—a Japhetic experience and record, not a Semitic nor a Hamitic one. The Iranian derived it from his own ancestry; he borrowed it neither from Jew, Babylonian, Egyptian nor Greek. Further, the division of the day is a peculiar one; it is neither into twelve parts, as with the Babylonians, nor into twenty-four, as with the Egyptians, but into eighteen.

THE BUNDAHIS.

I can find the date, neither of the sojourn of Yim within the polar regions, handed down in the Vendidad, nor of the sojourn in latitude 49° north, embodied in the Bundahis; both belong to Iranian pre-history. But of the date when the Bundahis itself was compiled, the evidence is clear and unmistakable, for its framework is connected with the constellations, and the references to these are consistent throughout its 34 chapters.

Thus in Chapter II, *Varak*, the Ram, is given as the first of the signs, and in Chapter V the summer solstice is placed at the first degree of the Crab (*Kalakang*), showing that it is later than Hipparchus. Chapter VII, verse 2, states that:

“Every single month is the owner of one constellation: the month *Tir* is the fourth month of the year, and Cancer the fourth constellation from Aries.”

The solar year is therefore the one in use, as its months are arbitrary and conventional months, not natural months or lunations, as with the Jews and Babylonians. But Chapter XXXIV allows us to date the book more precisely. It gives the chronology of the world, stating that “Time was 12,000 years,” and that each millennium was placed under the rule of a sign of the zodiac.* For the first 3,000 years under the reigns of Aries,

* This is evidently a misrendering and misunderstanding of the great discovery of Hipparchus, made 128 B.C., who found that the equinoctial point moved backwards through the signs at a rate which, according to his determination, would complete the revolution in 36,000 years. The writer of the Bundahis (*circa* A.D. 40) evidently supposed that the movement was a forward one, and was three times as rapid as Hipparchus had computed. But it is evident that, in spite of these mistakes, the compiler was attempting to place the Magian revealed religion on a sound scientific basis—a basis of science up-to-date. But before this astronomical discovery of Hipparchus could have thus been accepted as a part of divine revelation, not only by his own, but by other nations, some long period of time must have elapsed. For it was accepted so

Taurus and Gemini, there was negation. The second period of 3,000 years under the rule of Cancer, Leo, and Virgo, was "the duration of Gayomard, with the ox, in the world," that is to say, the world was under the active dominance of the Good Spirit. The reigns of Libra, Scorpio, and Sagittarius were those when "the adversary wrought his evil work," and his dominance came to an end "at the coming of the religion," that is to say, when Zoroaster brought in his faith.* In the most complete copy of the Bundahis that we have, Sagittarius is the last millennial reign mentioned by name of the sign, and its events are given in detail, these adding up to 1,000 years precisely. Then come a number of details referring to the following millennium, that of Capricornus, mentioning various kings who have been identified with Persian monarchs, and also "Alexander the Ruman," and giving the length of the Askanian dynasty as 284 years, another MS. giving it as 290 years. The record of this millennium is not rounded off as were those of the millenniums preceding it, but a few words follow, evidently written much later, assigning the rest of the 1,000 years to the Sassanian dynasty. In this addition the writer of it, whoever he may have been, went wrong, for the Askanian dynasty lasted, not for about 300 years, but for about 500, but the error would lead us to conclude that the original compiler wrote about the 284th year of the Askanian dynasty, that is about A.D. 40, and that his original

fully that it was neither studied nor questioned, and it followed that it was misunderstood and misrepresented. At that period the process would have required a considerable time. Now-a-days we can pass through the same stages of accepting, misunderstanding and misrendering scientific facts more rapidly than at the beginning of the Christian era. Printing, steam and electricity in these times speed up the propagation of error as well as of truth.

* The *traditional* date of the birth of Zoroaster is about 660 B.C. "The Coming of the Religion," when King Vishtasp accepted Zoroaster's preaching and became his patron and protector, must therefore be put not long before the beginning of the sixth century before the Christian era. King Vishtasp—Hystaspes in the Greek—is supposed by some to have been the Hystaspes who was the cousin of Cyrus the Great, and the father of Darius. In any case he must have been of the same family. If he were, indeed, this Hystaspes, the traditional dates must be a few years too early.

It is true that the tendency of scholars is now to place Zoroaster many centuries earlier, but this is not borne out by the Persian tradition, by the Bundahis, or by the fact that Darius Hystaspis is the first great monarch whose monuments show that he was himself an ardent Zoroastrian.

work ended with the statement that the dynasty had then lasted for 284 years.

In this connection there is a Parsi tradition which is of great significance. Alexander the Great is accused of having destroyed many of the Avestan books, and it is recorded of a certain Askanian king, Valkash, that he caused the scattered fragments of the remnant tradition to be collected together. This Valkash is identified with Vologeses I., king of Parthia, a contemporary of Nero, and though a Greek by birth, a convert to Zoroastrianism. Since the Bundahis was collated at this very time, and bears traces of the system of Hipparchus in its astronomical framework, I think the probability is great that it was compiled by this very king Vologeses.

At this time, in the middle of the first century of our era, there was great interchange of religious thought. Many men were changing their faiths in their earnest searching after God. This Vologeses was king of Parthia, and his father, Artabanus, was under deep obligations to Izates, the king of Adiabene, the very centre and home of the Magi. Perhaps it was through this connection that Vologeses and his brother Tiridates adopted the Magian faith. Izates was the son of Monobasus, king of Adiabene, and of Helena, his queen and sister; that is to say, Monobasus and Helena had performed one of the most sacred rites of the Magi, a next-of-kin marriage. Izates was therefore divinely king, through his father, through his mother, and through their fulfilment of this rite. Nevertheless, after the death of Monobasus both Queen Helena and Izates, her son, embraced Judaism through the teaching of certain Jews, Ananias and Eleazer; and his Magian nobles, objecting to the rule of a king of the Jewish faith, called in Vologeses to depose him. Josephus slurs over the subsequent events, so that they are scarcely intelligible, for though he makes out that Izates was victorious in the struggle, yet he and his mother and his many children retired to Jerusalem, and Monobasus, his brother, reigned in his stead, first as regent, and then after the death of Izates (about A.D. 50) as king. The tomb of Queen Helena is at Jerusalem to this day, and indeed it is but a few years since M. De Sauley opened her sarcophagus and found her very form, and on the sarcophagus was an Aramaic text beginning with the legend "Elen Malkatha," or "Helena the Queen." The children of Izates were in Jerusalem during the siege by Titus, and were carried as hostages to Rome.

When kings change their faith, there are many converts also among their subjects. Here, then, we have Greeks becoming

Zoroastrians and Zoroastrians becoming Jews. The Greek and Zoroastrian religions were very different, but the Zoroastrian was the higher in ethics and in spiritual ideals. Was there anything common to the Zoroastrian and the Jewish faiths to lead the former to look for the fulfilment of its hopes in the latter?

In the XXXth chapter of the Bundahis, found in all its MS., we read:—

“On the nature of the resurrection and future existence it says in revelation that . . . After Soshyans comes they prepare the raising of the dead.”

Soshyans is the son of Zoroaster, miraculously to be born at the end of the age, and the meaning of the name is Saviour or Deliverer; it could be translated into Hebrew as Joshua, or in the Greek form of this as Jesus. And this doctrine of a coming Saviour is not found for the first time in the Bundahis. It is plainly indicated in the Gathas, the very earliest Zoroastrian literature extant. And this hope we must believe came from God, for about the 600th year of the millennium of Zoroaster, some 40 or 50 years before the Bundahis was compiled, Magi, that is to say men of the Magian race and Magian faith, came, not improbably from Adiabene, the Magian land, the kingdom of Monobasus and Helena, to Herod the Great and said: “Where is He that is born King of the Jews? For we have seen His star in the east and are come to worship Him.” That their journey to find the King of the Jews was undertaken by direct divine guidance we may be sure, for of their return journey we are expressly told that they were “warned of God.”

And as the Magi knelt before the infant King and made their offerings of gold, frankincense and myrrh, there is one question which we may be sure that they asked:—“What is His name?” And there is but one answer which Joseph could give to them: “His name is Jesus, for He shall save His people from their sins.”

IV EZRA.

It is obvious that Greek astronomy left a strong impression on the Bundahis; here the Magian traditions are incased in a Greek astronomical framework, and we may trace this to the Askanian training of the compilers that King Valkash set to work. Can we trace in any similar fashion the influence on Jewish literature of the Magian training of Persian converts to Judaism?

For traces of such influence we turn to the Apocrypha and to the Apocalyptic books in particular. It does not concern me here whether one author or many went to the writing of each of these pseudo-prophecies; I deal only with the astronomy wherever it is present, though questions of date and of interpolations are sometimes involved.*

There is no question as to the date of that Salathiel who assumed to himself the name of the great Scribe of the Return from the first Exile. He himself said he wrote the book in "the thirtieth year after the ruin of the city," that is after the destruction of Jerusalem by Titus in A.D. 70. All scholars agree on dates close to this, even when they divide IV Ezra into a Salathiel-Apocalypse and an Ezra-Apocalypse. But the book is not, as Dr. Sanday says, "a pure product of Judaism," for a Jew untainted by Græco-Magian traditions would have divided all time into seven millenniums, based on the seven days of Creation, but Pseudo-Ezra, in chapter xiv, 10-12, writes:

"For the world hath lost its youth and the times begin to wax old. For the world is divided into twelve parts, and ten parts of it are gone already, even the half of the tenth part, and there remain of it two parts after the middle of the tenth part."

This is manifestly a direct reproduction of the Bundahis "Time was for 12,000 years," and like the Bundahis, he places the writing of his book in the tenth millennium, after the middle of it. A "pure" Jew would have dated the fall of Jerusalem

* I have found no important material for my present purpose in the Apocalypse of Baruch, the Assumption of Moses, the Ascension of Isaiah, or the Testaments of the Twelve Patriarchs. But for the fact that I have been able to search these books for astronomical allusions, and not only these, but the more fruitful fields of the Enoch literature and the Book of Jubilees, I am entirely indebted to the long series of magnificent works produced by Canon Charles. I am deeply indebted to him, not for the mere rendering into English only, but for the fullness and the particularity of the translation and his notes, by which he has placed the immense resources of his scholarship freely at the disposal of a student quite unlearned in Oriental languages. My only clue in the interpretation of these books is the astronomical one, and it has happened in more than one instance that where Dr. Charles himself has deemed the text to be so corrupt as to be unintelligible, I have been able to grasp what was the astronomical meaning that the author had desired to convey; for though he had expressed himself confusedly, he had not been wholly without intelligence, and Dr. Charles placed the details of the problem so completely before me that I was able to arrive at a probable solution of the enigma.

in the world-calendar as half-way through the fourth millennium from the Creation, or perhaps at the beginning of the fifth millennium, or in the third century of that millennium,* according to the particular chronology that he adopted. Actually the fall of Jerusalem was near the end of the seventh century of the millennium of Zoroaster, the tenth of the Magian world-calendar.†

Here, the Magian tradition has prevailed over the Jewish, but in Chapter vii, 28-30, the two traditions are blended. The angel Uriel is represented as speaking to the prophet :

“For my son Jesus shall be revealed with those that be with him, and shall rejoice them that remain four hundred years. After these years shall my son Christ die, and all that have the breath of life. And the world shall be turned into the old silence seven days, like as in the first beginning : so that no man shall remain.”

The “old silence” which here is to prevail for seven days “like as in the first beginning,” is adopted from the Magian description of the first quarter of the 12,000 years :—

“It says in revelation that three thousand years was the duration of the spiritual *state*, where the creatures were unthinking, unmoving and intangible.” (S.B.E., Vol. V, Chapter xxxiv.)

It is objected to the 28th verse of this passage that :

“The word Jesus in II Esdras, vii, 28, is also absent from the Oriental versions ; it is only found in the Latin and is no doubt a late Christian gloss.”

* “Rav Chanan Ben Tachlepha reported to Rav Joseph : ‘I met a man who had a roll in his hand, written in the Assyrian characters, but in the sacred tongue. I asked him, Where hast thou got it ? He replied, I had enlisted in the armies of Persia, and I found it among the treasures of Persia. In it was written : The world will come to an end in the year 4291 from the creation of the world. Some of these years will be noted for wars among the sea monsters, and others for the wars of Gog and Magog, and the rest will be the days of the Messiah ; though the Holy One, Blessed be He ! only renews the world after seven thousand years.’” (*Sanhedrin*, fol. 97, col. 2.)

† It is significant that the Ethiopic version of Pseudo-Ezra reads “For the world is divided into *ten* parts, and is come unto the tenth, and half the tenth remaineth.” I think that this points to the Ethiopic version having been made so late that the translator, not understanding the Magian twelve-fold division of world-time, substituted the Ptolemaic ten-sphere division of the heavens as being more correct.

The explanation raises greater difficulties than does the passage. Omit the name Jesus, and what is there in the passage that should lead any Christian, whether late or early, to connect it with our Lord and to interpolate His Name in it? Neither Christian nor Jew look back to an era of negation, and assuredly they do not look forward to such as the end of all things; the "old silence" is wholly a Magian tenet. It is not now, nor has it ever been, the Christian belief or hope that the Lord Jesus Christ should come to remain four hundred years and that after these years He and all that have the breath of man should die. The Christian faith is now, and always has been, "Christ being raised from the dead, dieth no more, death hath no more dominion over Him." There is no sect, however ignorant or heretical, that has abjured this. Further, no Christians have ever held that our Lord was the son of Uriel, the Angel of Light.

Had the insertion of the words "Jesus" and "Christ" been a "late gloss," then whoever inserted them was no orthodox Christian, though possibly he may have been a follower of some Gnostic heresy.

Can we trace elsewhere, late or early, a reference to such a final four hundred years in any world-period? Can we find any reason why the name Jesus should be inserted in connection with it?

Apocalypses and Pseudo-Apocalypses were not peculiar to the Jewish and Christian faiths. There is a Magian Apocalypse, the Bahman Yast,* which in beauty of language

* E. W. West writes as follows in his Introduction to the Bahman Yast:—

"Whether this text, as now extant, be the original commentary or *zand* of the Vohuman Yast, admits of doubt, since it appears to quote that commentary (chap. ii, 1) as an authority for its statements; it is therefore most probably only an epitome of the original commentary. Such an epitome would naturally quote many passages verbatim from the original work, which ought to bear traces of translation from an Avesta text, as its title *zand* implies a Pahlavi translation from the Avesta. There are in fact many such traces in this epitome . . . In speculating therefore upon the contents of the Bahman Yast, it is necessary to remember that we are most probably dealing with a composite work, whose statements may be referred to the three different ages of the Avesta original, the Pahlavi translation and commentary, and the Pahlavi epitome of the latter; and that this last form of the text is the only old version now extant . . . Perhaps the most reasonable hypotheses that can be founded on these facts are, first, that the original *zand* or commentary of the Bahman Yast was written and translated from the Avesta in the latter part of the reign of Khusro Noshirvan

and sublimity of thought and aspiration, compares by no means unfavourably with even the best of the Pseudo-Apocalypses.

In the third chapter of this Bahman Yast we read :

43. "Auharmazd said to Zaratusht the Spitaman . . . This is what I foretell, when it is the end of thy millennium it is the beginning of *that* of Hushedar. 44. Regarding Hushedar it is declared that he will be born in 1600, and at thirty years of age he comes to a conference with me, Auharmazd, *and* receives the religion. 45. When he comes away from the conference, he cries to the sun with the swift horse, thus : 'Stand still'." (Bahman Yast, III, 43-45.)

E. W. West's comment on this passage is as follows :

"There seems to be no other rational way of understanding this number (1600) than by supposing that it represents the date of Hushedar's birth, counting from the beginning of Zaratusht's millennium. According to this view, Hushedar was to be born in the 600th year of his own millennium.

Zaratusht, according to tradition at least as early as the Bundahis, was to have three sons, born miraculously after many centuries had passed. These three, Hushedar, Hushedar-Mah and Soshyans were respectively to rule over the last three millenniums of the great twelve-fold world time. Here in the Bahman Yast we have it declared that the first of these three sons is to be born in the 600th year of his own millennium; that is to say, he is "to be revealed" only during the last four hundred years of it.

The division, then, of the world-millenniums into 600 years and 400 years—600 before the coming of the Saviour, 400 during which He is revealed—is a Magian tradition, and is a sufficient explanation of the 400 years during which, according to iv Ezra, "My son, Jesus, shall rejoice them that remain." Clearly it is neither the Jewish Messiah nor the Christian Jesus who is here described by Pseudo-Ezra, but the Magian Soshyans.

(A.D. 531-579), or very shortly afterwards, which would account for no later king being mentioned by name; and secondly, that the epitome now extant was compiled by some writer who lived so long after the Arabic invasion that the details of their inroad had become obscured by the more recent successes of Turanian rulers. . . . The Avesta of the Bahman Yast was probably compiled from older sources (like the rest of the Avesta) during the reigns of the earlier Sassanian monarchs."

But when could this Magian tradition of the coming of the Saviour in the 600th year of a world-millennium have arisen? May it not have been that it is an echo and an effect of that wondrous journey, undertaken about the time of the 600th year of the millennium of Zoroaster, when, guided by a star, the Magi set forth to find Him Who was born King of the Jews, and to lay at the feet of the Infant Saviour their princely offerings of gold, frankincense and myrrh?

"IV Ezra is an apocalyptic book; it professes to give a forecast of the times of the end; it claims to be a work of the same order as the book of Daniel, which book the author avowedly had in his hand, and of the Johannine Revelation, with which work he was clearly acquainted, though without acknowledging it; as of course such acknowledgment would have been incompatible with the use of his adopted *nom de plume*. We are at present only concerned with the astronomical allusions in it, or it would be a matter of interest to trace the points of contact and difference between IV Ezra, and its two great models. Nevertheless the astronomical allusions will suffice for illustration.

"St. John has seen two visions; with his bodily eyes he has seen certain phenomena in the material heavens; an eclipse of the sun, an eclipse of the moon, a magnificent meteor shower, a dazzling aerolite. And he has seen with his spiritual sight certain spiritual happenings in the spiritual heavens. And the two visions are alike; as is the one, so is the other; the man who has seen both says so, and the simplicity of his assertion carries conviction with it. He has no astronomical interest in what he has seen; he has no astronomical theories about it; he describes what he saw as it appeared to him; and so doing, he makes no astronomical mistakes.

"Not so with the author of IV Ezra. There is no vision; he is labouring to build up a vision from that which he has read of what other men have seen. He would carve the revelation made to Daniel or to St. John to suit his own desires or hopes, and he works in the astronomical imagery to fit a pre-conceived ideal. Thus in IV Ezra v, 4-5, we read:

But if the Most High grant thee to live, thou shalt see that which is after the third kingdom to be troubled; and the sun shall suddenly shine forth in the night, and the moon in the day; and blood shall drop out of wood, and the stone shall give his voice, and the peoples shall be troubled, and their goings shall be changed.

"The writer wished to express that everything would be

turned upside-down, and out of its ordinary course, and in accordance with the precedents of Isaiah, Daniel, and St. John, he took the two great lights as representative of all creation. But he forgot that these two great lights have their natural use as well as their use as types; that indeed their typical quality depends on their natural use. Now it is the shining of the sun that makes the day, and the shining of the moon is apparent only when the brighter shining of the sun is not there to overpower it; so that when he says that the sun shall suddenly shine forth in the night, and the moon in the day, he is not expressing, as he desires to do, that the actuality of day and night has been changed, but only that the terms by which these are designated have been altered.

"Elsewhere also the attempt is marked in *iv* Ezra to show forth in detail, after this manner, the mind and working of God by exhibiting the details of the working of some symbol or emblem, which God has used through His prophets to declare His will. It is, so to speak, a mechanical method of prophecy, and is not very far removed from mere fortune-telling or divination.

"Thus both the prophets Isaiah and St. John use the simile of a shower of shooting stars, describing it by the terrestrial analogy of a fig-tree shedding its leaves or untimely fruit. In both cases, the description evidently comes from a man who has actually seen such a star shower, but no cause or theory is given for it; it is simply given as a picture of how the high and bright ones should be cast down. So too, St. John when he uses the imagery of a fireball, 'Wormwood,' gives no explanation as to what such fireballs are, and whence they come. Not so in *iv* Ezra. In the xvth chapter, there are many references to a 'terrible star' which strongly suggest that the author had read *Rev. viii, 10*. In verses 34-35, he says:

Behold clouds from the east and from the north unto the south, and they are very horrible to look upon, full of wrath and storm. They shall dash one against another, and shall pour out a plentiful storm (Latin, star) upon the earth, even their own star. . . . (verse 40.) And great clouds and mighty and full of wrath shall be lifted up, and the star, that they may destroy all the earth, and them that dwell therein: and they shall pour out over every high and eminent one a terrible star, fire, and hail, and flying swords, and many waters, that all plains may be full, and all rivers, with the abundance of those waters.

"The author here is giving expression to the theory, held,

indeed, up to a hundred years ago, that these aerolites are the products of storm-clouds, and are generated, along with lightning and hail, in the upper atmosphere.

"The above are instances of the mechanical use that the author of IV Ezra makes of astronomical imagery to elaborate his thought. In a similar fashion he makes use of number. In his day—and indeed in most ages, even in our own—it is thought that there is a mystery of number; that in certain abstract numbers there resides a concrete virtue or malignity. Some numbers are perfect; perfect, it is implied in themselves, so that even God is bound to employ them, for otherwise He would fall short of perfection. This belief in the holiness and power of certain given numbers is a superstition at the base of many incantations and magical formulæ in all races."*

IV Ezra is an apocalyptic book, written by a faithful Jew, one who turns to God in almost passionate reproach for the disasters which have fallen upon His chosen and peculiar people, but, at the same time, in unshaken faith that in the end God will again be favourable and restore and exalt them. Of all the numerous apocalyptic books which have attracted the attention of scholars in recent years, it is the only one that has attained semi-canonical estimation; if the simile may be allowed, it has gained admission to the Court of the Gentiles. And not quite unworthily, for with all its many and conspicuous faults, it was at least the expression of a man of intense earnestness, who felt to the quick the destruction of the Temple, the dispersion and sufferings of his people, the downfall of his hopes and of the Messianic Empire.

But many of the other apocalypses, and in particular the two bearing the name of Enoch have, of late, had conferred upon them a position which, if confirmed, would raise them far above IV Ezra in importance. IV Ezra was written at the end of the first or the beginning of the second century of our era, long after the initiation of Christianity. These other books are alleged, on the contrary, to have been written before our Lord's Ministry, and therefore to reveal to us the religious views current at that time. It is said that they represent, even if they did not themselves actually form, the background which

* *The International Journal of Apocrypha* for July, 1912, pp. 46-52, "The Astronomy of the Apocrypha," by E. Walter Maunder.

gives to His work its true perspective, and that it was from them that He and His Apostles drew their doctrines for the present and the future life, and their ideas of the final judgment—in a word, their eschatological teaching.*

SLAVONIC ENOCH (*The Secrets of Enoch*).

The two books of Enoch show considerable points of similarity, but they come to us from different sources, different dates are assigned to them, and they are not attributed to the same authors. The one of later date is known solely through Slavonic manuscripts, translations of a presumed Greek original, and for this reason is usually termed the "Slavonic Enoch." The other comes in the main through Ethiopic manuscripts, though fragments of it have also been found in Greek; it is therefore known as the "Ethiopic Enoch."

The Slavonic redaction of the text of the Book of the Secrets of Enoch, translated for the first time into English in 1896 by Professor W. R. Morfill, and edited by Dr. R. H. Charles, has come down to us mainly in two versions:—A, which is a South Russian recension, and B, a short and incomplete redaction of a Serbian text. Canon Charles says, "as regards the relative merits of A and B, though the former is very corrupt, it is nevertheless a truer representative of the original than B. B is really a short *résumé* of the work, being about half the length of A."†

Professor Sokolov, of Moscow, had previously brought out an edition of the work, having not only A and B, but three other similar manuscripts upon which to base a text, but in his editing he does not discriminate between the various sources which he employs. This Dr. Charles does invariably, to the great benefit of the student. Professor Morfill's text is chiefly based upon A, for B leaves out much of what is found in A,

* Canon E. McClure, in his paper read before the Victoria Institute on "Modernism and Traditional Christianity" (January 18th, 1915), drew special attention to the part which has been played in the Modernist movement by this claim as to the importance of the apocalyptic literature and has given in a footnote an admirable summary of the principal works composing this literature.

In the present paper I am concerned only with those books which supply astronomical allusions of importance.

† §3 of the *Introduction*.

though in the remainder it differs for the most part slightly or not at all; in one or two cases it transposes or paraphrases the subject matter of A. Titles to the chapters are found in A, but not, as a rule, in B, and Professor Sokolov does not include them in his text, though he had A before him. Dr. Charles also believes that these titles have no claim to antiquity. It is evident that both A and B are translations from the same Greek original; almost certainly one is a copy and the other a *précis* of the same Slavonic translation—as translations they are not independent.

Dr. Charles says that the main part of the book was written for the first time in Greek; he concludes this from the fact that the writer follows the Septuagint, both in his chronology, and in his quotation from Deuteronomy xxxii, 35. Also from the statement in Slav. Enoch XXX, 13: "And I gave him (that is Adam) a name from the four substances: the East, the West, the North, and the South"; Adam's name being here derived from the initial letters of the Greek names of the four cardinal points. This argument is not, however, conclusive, since not only does the writer (in A) make a mistake in the order of the cardinal points, thus transposing Adam into Adma, but, though the conceit is undoubtedly only possible in Greek, it is frequently used by writers of other languages, as by the Venerable Bede in his Latin work *In Genesim Expositio*. More cogent evidence to the fact of a Greek original is, I think, afforded by the third verse of the same chapter, where the names of the "Seven Planets" are given in their Greek form (but here B omits the passage).

We may take it, then, that A, B, and the other Slavonic manuscripts are copies—more or less complete and correct—of a single translation which we will call T, from a single original Greek manuscript which we will call O. From the evidence in hand we cannot allow that there were several Greek manuscripts differing from each other substantially, or that translations, differing essentially from each other, were made from them. When was T made?

T could not have been made at an earlier date than the ninth century A.D., for it was only in the latter half of this century that St. Cyril devised the Slavonic alphabet, and in conjunction with St. Methodius translated parts of the Bible into Slavonic. Therefore the Greek manuscript O, from which T was made, must have been in existence as late as the ninth century A.D. When, then, was O, or the original of O, first written?

Dr. Charles writes of it* :—

“This must be set down as earlier than A.D. 70. For (1) the Temple is still standing—see lix, 2.† (2) Our text was probably known to some of the writers of the New Testament.‡ (3) It was known and used by the writers of the Epistle of Barnabas, and of the latter half of the Ascension of Isaiah. We may, therefore, with reasonable certainty assign the composition of our text to the period A.D. 1–50.”

But assuming with Dr. Charles that Slav. Enoch was composed in the first half of the first century of our era, we are brought up against this amazing proposition. Here is a Greek manuscript of such great import that it served as the basis of our Lord's great discourse, that it coloured His spiritual outlook and that of His disciples, that it inspired many writers in the first five centuries, that it remained as an actual document throughout nearly a thousand years, that it was then translated into the newly written Slavonic language, yet of all the many Greek transcriptions that must have been made of this original Greek work of such transcendent importance, not one single vestige remains—we are indebted for our knowledge of its very existence to a single translation into Slavonic, or rather to a few copies of that single translation.

In view of the difficulties inherent in this proposition, it is worth while to examine whether the astronomy in the book bears out its early date, for they were astronomical “secrets” that formed “the Secret Books of God which were shown to Enoch.”

The first twenty-two chapters of Slav. Enoch give a detailed description of his journey through the “seven heavens.” In the first heaven are the elders and rulers of the stars; the second heaven is its counterpart hell, for here are confined the angels who fell “awaiting the eternal judgment.” With the

* §7 of the *Introduction*.

† This is argued from the passage in chap. lix, 2: “For a man offers clean animals and makes his sacrifice that he may preserve his soul. And if he offer as a sacrifice from clean beasts and birds, he preserves his soul.” It is assumed that no Jew would refer to sacrifice unless such was actually being offered in the Temple at Jerusalem. But see *Taanith*, fol. 27, col. 2, on this very matter.

‡ This is because of the “striking parallelisms in diction and thought.” The particular instance adduced is the supposed adoption by our Lord, in His Sermon on the Mount, of the beatitude: “Blessed are the peacemakers” as from the passage in Slav. Enoch, “Blessed is he who establishes peace”!

third heaven the astronomical interest begins, for Enoch was brought there and

"I looked below and I saw gardens such as has never been known for goodliness . . . and in the midst the tree of life in that place, on which God rests, when He comes into Paradise . . . From its root in the garden, in the going out towards earth, Paradise is between corruptibility and incorruptibility. There go forth two streams which pour honey and milk, oil and wine, and are separated in four directions, and go about with a soft course. And they go down to the Paradise of Eden between corruptibility and incorruptibility. And thence they go along the earth and have a revolution in their circle like also the other elements."

So reads A; B omits some of the details, and for "two streams" reads "four."* It is evident from this passage that the "third heaven" and the Garden of Eden have an intimate geographical relationship to each other, something like that between the heavenly Iran-Veg of the Iranians and the Enclosure of Yim. A similar, but not the same, relationship, for B recollected—though perhaps A did not—that the Garden lay "eastward in Eden," and in Chapter XLII, B inserts, though A omits:—

"I went out to the East, to the Paradise of Eden, where rest has been prepared for the just, and it is open to the third heaven, and shut from this world. And guards are placed at the very great gates of the East of the Sun, *i.e.*, fiery angels, singing triumphant songs that never cease rejoicing in the presence of the just. At the last coming they will lead forth Adam with our forefathers, and conduct them there."

It is evident that B considered that Adam and the forefathers were remaining in the third heaven until "the last coming," when they will be conducted to Eden, "where rest has been prepared for the just."

The further description of the "third heaven" removes any doubt that it was indeed the Iranian conception of heaven, hell and paradise that inspired the author of the "Secrets," and not

* Not only does A omit any reference to the Garden of Eden being in the East, but it gives two streams, not four, as in the Bundahis XX: "1. On the nature of rivers it says in revelation that these two rivers flow forth from the north, part from Alburz and part from Alburz of Auarmazd . . . 4. Both of them continually circulate through the two extremities of the earth, and pass into the sea; and all the regions feast owing to the discharge (zahak)."

any account that he derived from Genesis, for while still in the third heaven, his conductors led him to hell :—

“to the northern region and showed me there a very terrible place. And there are all sorts of tortures in that place. Savage darkness and impenetrable gloom, and there is no light there, but a gloomy fire is always burning and a fiery river goes forth. And all that place has fire on all sides, and on all sides cold and ice, thus it burns and freezes.”*

Earlier in this paper, I have shown that this idea of a northern hell, a northern heaven, and a northern paradise for the righteous (displaced by B to the east of north) is peculiar to the Iranians; the Jewish writer of the “Secrets of Enoch” must, therefore, have derived it from an Iranian source, and, as we have seen, this stamps it as late, certainly later than A.D. 40.

The description of the fourth heaven contains many astronomical technicalities, and some are useful for the purpose of dating the passage. In Chapter XVI, Enoch is “placed at the East, at the course of the Moon.” The course of the moon is not given according to the lunar asterisms, or to the signs of the zodiac, or to lunations or phases, but as passing through “twelve great gates extending from the West to the East,” and the stay of the moon in each of these gates is given in days, and those days correspond to our present conventional months, beginning with one of thirty-one days, *i.e.*, March, and ending with one of twenty-eight days, *i.e.*, February.† Now the Jewish months were actual lunations; by the observation of the new moons the sacred feasts were regulated prior to the destruction of the Temple, and indeed for some time afterwards. But the months of the calendar we use were arranged primarily by Julius Cæsar, and, after a slight modification, established in general use by Augustus shortly before our era. Slav. Enoch represents these conventional months as being divinely instituted—shown to Enoch as if they were among the secrets of God. No

* Compare the description in “The Opinions of the Spirit of Wisdom,” VII, 26-28: “Of hell . . . they execute punishments and torments. . . . There is a place where, as to cold, *it* is such as that of the coldest frozen snow. There is a place where, as to heat, *it* is such as that of the hottest and most blazing fires.”

† The text is somewhat corrupt. In two cases at least a wrong number of days is assigned to a month, and the sum of all the months does not agree with the total given.

orthodox Jew could so think of a calendar, the imposition of which, by a Gentile emperor, was fresh in his memory; indeed, no Jew, unless he were ignorant of the origin of the Julian calendar, could regard it as divine at all. Enoch is given in the same heaven an explanation of Leap Year, and this, too, was arranged by Julius Cæsar and established by Augustus. This section, therefore, must also belong to a late date, for the author of the "Secrets" must have lived long after the great Roman emperor for it to be possible for him to consider these arbitrary regulations of the calendar as divinely appointed, and as completely abrogating the calendar institutions of the Mosaic Law.

The fifth heaven was the home of the former companions of the fallen angels. In the sixth heaven, Enoch saw "seven bands of angels . . . and these orders arrange and study the revolutions of the stars," recalling the function of Haptok-ring, the seven stars in the Iranian heavens. In the seventh heaven the conductors showed Enoch "the Lord from afar sitting on His lofty throne," and A adds:—

"for it is that upon which God rests. In the tenth heaven, in the tenth heaven is God. In the Hebrew language it is called Avarat. And I saw the eighth heaven, which is called in the Hebrew language Muzaloth, changing in its seasons in dryness and moisture, with the twelve signs of the Zodiac, which are above the seventh heaven. And I saw . . . the ninth heaven, which in the Hebrew is called Kukhavim, where are the heavenly homes of the twelve signs of the Zodiac . . . In the tenth heaven Avaroth, I saw the vision of the face of the Lord."*

Dr. Charles urges that in A there are three notable interpolations. First, the mention of the great cycle of 532 years in Chapter XVI, 5, since this was first proposed by Victorius of Aquitaine about A.D. 457, and must therefore have been unknown to the author of the "Secrets," assumed to be writing between A.D. 1 and 50.†

Next, the titles to the chapters and divisions. For this

* This is a most distinct reference to the Ptolemaic system of ten spheres; i.e., the seven spheres of the planets, the sphere of the Signs of the Zodiac, the sphere of the actual stars, and the sphere of the diurnal motion, the *primum mobile*. The passage is, therefore, not earlier than the latter part of the second century A.D.

† This line of argument is open to most serious objection. The date of a document (where unknown independently) ought to be derived from the information afforded by the text. It is doubly illegitimate to assume a date and reject all information given by the text where this is inconsistent with it.

Dr. Charles gives no reason except that they are not given universally in B, and that neither does Professor Sokelov give them in his text. Since Professor Sokelov had A before him, this last depends solely on Professor Sokelov's judgment.

Third, the references to the eighth, ninth and tenth heavens Dr. Charles says:

"This . . . is clearly an interpolation. It is not found either in B or Sok. Furthermore, throughout the rest of the book only seven heavens are mentioned or implied."

It is necessary to examine into these interpolations, since it is obvious that they affect seriously the question of the date of the book.

When could such interpolations have been introduced? They might be introduced in a Slavonic MS. by the scribe of A, and so, necessarily, not affect B or any other manuscript copy of T; or by the translator who produced T, or by a later copyist of O, the original Greek MS.

If they were introduced by the scribe of A, then they were made in the Slavonic language and by a Slavonic writer, and this implies that in the Middle Ages there was a Slavonic writer of considerable astronomical knowledge, who thought it worth while to rewrite a very sapless mystical tract for the sole purpose of introducing these astronomical interpolations.

It further implies that B—not A—best represents the original translation, T, into Slavonic; for it is clear that A and B, so far as they give the same details, do not represent independent translations, but a single one.

If the interpolations were introduced by the translator of T, then no weight can be given to their absence from B or other manuscripts, for these, equally with A, were ultimately derived from T. A, on this hypothesis, best represents T.

The same argument applies if the interpolations were introduced by the scribe of O. If there were two Greek MSS., one with the interpolations, the other without, it still remains certain, since A and B, so far as they cover the same ground, are not independent translations, but more or less faithful reproductions of a single translation, that it is the fuller Greek text that must have been in the translator's hands. Hence the deficiencies of B as compared with A represent omissions from the Greek original; they are no evidence as to interpolations. A, therefore, best represents O.

But, since O (afterwards rendered into Slavonic) must have been in existence about the 9th century A.D., some pertinent

evidence on the subject of its style and matter may be got from an astronomical treatise, written just about that time and also rendered subsequently into other languages.

In the March of 1914, there was published by the Irish Texts Society, an English translation made by Maura Power of an Irish Astronomical Tract. This tract is part paraphrase and part translation of a Latin version of an Arabic treatise by Messahalal, a Jewish astronomer of Alexandria, who flourished shortly before A.D. 800. This Arabic work was translated into Latin by Gerard of Sabionetta in the thirteenth century, and of Gerard's translation there were several editions during the succeeding centuries, but it is probable that the Irish Tract is not based on any of those we now possess.

If we compare the Irish Tract and the "Secrets of Enoch," we find them of about the same total length, divided into short chapters having, in the Irish text, Latin headings, and in the Slavonic, headings which may or may not have been translated from the Greek. The Irish Tract is known to derive its origin from a Jew of Alexandria; Dr. Charles derives the Greek original of the "Secrets of Enoch" also from a Jew of Alexandria living, as he avers, at a much earlier date than Messahalal. The Irish Tract is strictly a scientific one—an astronomical educational text-book for use in the Irish schools of the fourteenth or fifteenth centuries. The Slavonic Tract purports to be a theological one, but its theology is based on a mystical astronomy. Nevertheless, in Chapter I of the strictly scientific Irish treatise, the author speaks of "the seven spheres of the firmament" as if there were seven and seven only, and yet in Chapter XXIX he says:

"As Ptolemy and the other philosophers declare, there are ten large spheres, and the largest sphere of those, which is called the very great sphere, possesses the same motions as the sphere of the signs, since both move westward."

Now neither of these is an "interpolation," and the author's scientific mind received no jar by the inconsistency; he knew the meaning of both conceptions.

"The very great sphere" and the tenth sphere of which Slav. Enoch says, "In the tenth heaven, in the tenth heaven is God;—in the Hebrew language it is called Avarat," are the same. But the author of the Irish Tract continues in Chapter XXX:—

"Be it known unto you that the very great sphere is the straight sphere. Ill-informed persons have given many erroneous opinions

concerning it, for they declared that, since it is the highest and loftiest and swiftest of the spheres, it is the origin of the universe. . . . The ill-informed have said that it has life, and that everything receives life from it."

It might almost seem as if one of the "ill-informed persons" referred to was the author of the Slavonic Enoch, since he confines the Deity so decidedly to the tenth heaven, that there might almost be an identification between Him and it.

Since, then, the original author of Slavonic Enoch could not have lived at so early a date as Dr. Charles has given him; since, by comparison with the Irish Tract, there is no reason to judge the reference to the three outer heavens as interpolations; and since both books were written by Jews of Alexandria and—if we might so term it—published in the same style; is there really any serious objection to the conclusion that the author of the originals of Slavonic Enoch and Messahalalah were practically contemporaries, and that they were representatives of two opposing lines of thought, of two opposing purposes?

The purpose of the Irish Tract is not in doubt. It was a clear and scientific text-book, expressed in simple and unaffected language, for use in schools. It speaks well for the Irish schools in the Middle Ages that it was such a treatise that they caused to be translated into their vulgar tongue. It does not speak well for early Slavonic writers that they brought it about that the "Secrets of Enoch," with its mystic and perverted astrology, was translated into Slavonic, and—as far as we know—into Slavonic only.

The purpose of the "Secrets of Enoch" is no less clear. It is no genuine apocalyptic work, but over and over again we read such passages as:

"The Lord contemplated the world for the sake of man and made all creation for his sake, and divided it into time. And from the times He made years, and from the years He made months, and from the months He made days, and of the days He made seven. And in these He made the hours and divided them into small portions, that a man should understand the seasons, and compute years and months and hours, their alternations and beginnings and ends; and that he should compute his life from the beginning till death, and should meditate upon his sin, and should write down his evil and good deeds. . . . Let each man know his deeds, and not transgress the commandments, and let him keep my writings securely . . . every man shall come to the great judgment of the Lord. . . . Blessed are the just who shall escape the great judg-

ment! And they shall be seven times brighter than the sun, for in this age altogether the seventh part is separated."

And the author adds that he has

"laid down the four seasons, and from the seasons made four circles, and in the circles placed the years. . . . Concerning the years I have calculated each hour. . . . I have ascertained all their differences. As one year is more honourable than another, so is one man more honourable than another. . . . There have been many books . . . but none shall make things known to you like my writings."*

until the reader turns instinctively to see if, at the end of the paragraph, there is an (ADVT.) inserted, such as would appear in our newspaper press to-day after a similar article from a "Zadkiel" or a "Raphael." For this pseudo-prophet was simply a maker of horoscopes, doubtless for a price, as his analogues do to-day, and both the theology and the astronomy in his book were but the padding to attract his clients, and to clothe his self-advertisement. It is worthy of note that B leaves out the more technical details of astronomy; he was, perhaps, more interested in the mystical patter which describes the serpents at the northern gate of hell, or the window open between the northern heaven and the Garden in the East. Probably the 366 astrological tables themselves never reached Little Russia. Let us hope that they were heaved overboard to lighten the ship that took O from Alexandria.

ETHIOPIC ENOCH.

But Slavonic Enoch is of small importance. Of the other Book of Enoch or "Ethiopic Enoch," Professor Burkitt says in the Schweich Lectures of 1913 (p. 17):—

"It is best to begin at once with the prime reason that gives the book interest to us, and this is, its influence on the Christian Movement. 'Wandering Stars,' we read in the Canonical Epistle of Jude, 'to these Enoch also, the seventh from Adam, prophesied, saying "Behold the Lord came with ten thousands of His Holy Ones to execute judgment upon all, and to convict all the ungodly of all their works of ungodliness which they have ungodly wrought, and of all the hard things which ungodly sinners have spoken against Him."' This is a definite quotation which cannot be gainsaid. As

* These he does not give away; they were doubtless contained in the 366 books which he wrote in heaven with a reed for speedy writing, given him by the Archangel Vretil—unknown except in this connection. Doubtless these 366 books were astrological tables.

a matter of fact, the words quoted are the last sentence of the opening paragraph of the Book of Enoch. It is no mere illustration, no coincidence of ideas. 'Enoch' is quoted by name as inspired prophecy. This famous passage is very far from being the only trace of the influence of Enoch upon the New Testament, but it is the clearest and best known."

Professor Burkitt voices the (almost) unanimous opinion that St. Jude quoted from the Book of Enoch, and, be it noted, from the actual Book of Enoch,—Ethiopic Enoch—which we have in our hands now. It is unanimously agreed that Ethiopic Enoch is a collection of writings by various authors, but if so the compiler used discrimination in the collecting; he chose here and there what fitted in with his purpose, and Ethiopic Enoch has a certain unity. It is alleged that it was this same unity which was in existence and influenced the teaching and doctrine of our Lord and His Apostles, that it was this book as we have it now that received this *imprimatur* in the Canon of New Testament Scriptures from the pen of St. Jude.

Ethiopic Enoch is an apocalypse, that is, it is a "revelation to shew things which must shortly come to pass"; and to this, all of its five sections (into which Dr. Charles divides it) conform, either fully or in some measure. If it was written by a Jew;—when and where did he live, and what was his motive in compiling it?

The compiler's motive is clear. He recognized that the Jewish nation had suffered terribly. He also recognized that it had, as a nation, deserved punishment for its sins, but he felt that the sufferings it had actually experienced greatly outweighed the punishment which was justly due to it, and the purpose of his book is to explain the apparent anomaly.

He finds it here. God had placed the care of the nation in the hands of a number of angelic spirits who had been false to their trust, had led the nation into evil, and had destroyed them more than their commission allowed. For his argument he adduced the case of the fallen angels in the days before the Flood. These had been appointed to be the Watchers over mankind, but they had led men astray and ruined them. It was his belief also that the spirits controlling the heavenly bodies had sinned in the like manner, for in his view, sun, moon and stars did not perform their revolutions according to the laws which God must have laid down.*

* "I saw there seven stars like great burning mountains, and to me, when I inquired regarding them, 14. The angel said: 'This place is

The author represents Enoch as having received the true ordinances of heaven by a divine revelation, and these ordinances are presented in this book. In vision Enoch saw the coming of a man* to whom his brethren would listen, and who would open their eyes to the truth. Then the true ordinances would be restored, Messiah would appear, and the faithful would be received into the kingdom, while the blind and disobedient, whether luminaries, angels or men, would be punished.

The Book of Enoch then gives us clearly to understand some negative facts about its author. He was neither orthodox Jew nor orthodox Christian, nor even a scientific heathen. Neither Hillel, nor St. Paul, nor Hipparchus could have conceived of the heavenly bodies as possessing independent volition and wandering from their divinely-appointed paths in accordance with their own self-will. The XIXth Psalm expresses at once the Jewish, the Christian, and the scientific attitude. The movements of the heavenly bodies are the material expression of perfect and divine order. The attitude of Pseudo-Enoch cannot be put down to that of a pious but ignorant Jew, pious and learned in the law, but ignorant, necessarily, of the principles of science, because he had the misfortune to be born before our own time, which is the age of sweet reasonableness in all matters scientific. He was not an ignorant Jew, nor a pious one; he had the Hebrew Scriptures before him. He even quotes the Tersanctus from Isaiah, and varies it to suit his purposes. His piety, had it been genuine, would have saved him from his crass violation of the principles of science.

the end of heaven and earth : this has become a prison for the stars and the host of heaven. 15. And the stars which roll over the fire are they which have transgressed the commandment of the Lord in the beginning of their rising, because they did not come forth at their appointed times. 16. And He was wroth with them, and bound them till the time when their guilt should be consummated (even) for ten thousand years.”—Eth. En. xviii, 13–16.

4. “And the moon shall alter her order, and not appear at her time. 5. And in those days the sun shall be seen and he shall journey in the evening on the extremity of the great chariot in the west. And shall shine more brightly than accords with the order of light. 6. And many chiefs of the stars shall transgress the order (prescribed). And these shall alter their orbits and tasks, and not appear at the seasons prescribed to them. 7. And the whole order of the stars shall be concealed from the sinners, and the thoughts of those on the earth shall err concerning them. And they shall be altered from all their ways.”—Eth. En. lxxx, 4–7.

* This is evidently Pseudo-Enoch himself, the actual writer of the book.

Since Pseudo-Enoch was a Jew, and assuredly had the Hebrew Scriptures before him, and assuredly did not derive from them his conception that the stars, of themselves or influenced by spirits, could stray from their appointed paths, whence did he derive the origin of this, his main, conception? In other words, who were his associates, the people with whom he came into immediate contact? Does he give any hint as to these?

Under various symbols, Pseudo-Enoch refers to many "kings and mighty" men who oppressed his people, but he cites only two nations by name, and these for destruction:

"And in those days the angels shall return
And hurl themselves to the east upon the Parthians
and Medes."—(Eth. En. LVI, 5.)

And evidence of Pseudo-Enoch's close acquaintance with Parthians and Medes can be found in his book.

A fundamental Græco-Magian tenet, as set forth in the Bundahis, is this:—

"The evil spirit with the confederate demons went towards the luminaries, and he saw the sky; and he led them up, fraught with malicious intentions. He stood upon one-third of the inside of the sky, and he sprang like a snake out of the sky down to the earth. The month Fravardin and the day Auharmazd he rushed in at noon, and thereby the sky was shattered and frightened by him, as a sheep by a wolf . . . he made the world quite injured and dark at midday as though it were dark night . . . the sphere was in revolution, and the sun and moon remained in motion; the world's struggle, owing to the clamour of the Mazinikan demons, was with the constellations . . . The planets, with many demons, dashed against the sphere, and they mixed the constellations; and ninety days *and* nights the heavenly angels were contending . . . and the rampart of the sky was formed so that the adversary should not be able to mingle with it. Hell is in the middle of the earth; there where the evil spirit pierced the earth and rushed upon it."—(Bd. III, 10-27.)

As we have seen from the "Opinions of the Spirit of Wisdom," it is the seven stars of the Plough (Haptok-ring) which, with the guardian spirits of the righteous, circle round and guard the mouth of hell on the very northern border of the earth, and keep back the evil spirits that are in opposition to the sphere and constellations. These are the same ideas as inspired Pseudo-Enoch.

The IIIrd of Dr. Charles' Sections of Eth. En., that is, Chapters LXXII-LXXXII, is entirely concerned with the courses of the luminaries. Of it Dr. Charles says:

"We are not to regard it as anything more than the attempt of an individual to establish an essentially Hebrew calendar over against the heathen calendars in vogue around."

But it is a peculiar calendar which Pseudo-Enoch founds on the motions of the sun and moon, and, it may be added that, in the eyes of a practical astronomer, these motions attributed to the sun and moon are very peculiar. It is worth while to compare this "essentially Hebrew calendar" first with the one in use in Palestine, and next with that put forward by the Medes and Parthians with whom Pseudo-Enoch came in contact.

The calendar enjoined by the Law of Moses, and observed by faithful Jews, not only in their own land, but when dispersed over the whole world, was and is a luni-solar one. The months were regulated by the observation of the new moon; the first month of the year had the Passover at its full moon; the Feast of Trumpets was at the new moon of the seventh month; the Great Day of Atonement was ten days later; and the Feast of Tabernacles followed at the full of the moon in the same month. But the week, the month, and the year are not commensurable; no one of them, when multiplied, fits exactly into another; thus, four weeks and one or two days go to a lunation, fifty-two weeks and one day, or twelve lunations and eleven days, to a solar year. The great feast days, therefore, swing backwards and forwards over a period in the solar year, as do our Easter and Whitsuntide, and do not occur on a fixed day of the week. The faithful Jew recognized that, for him, God had "appointed the moon for seasons," and he was very careful to observe these seasons aright.

It is clear, then, that no faithful Jew could draw up a calendar that did not depend on the observation of the new moon, of the actual lunation; no "essentially Hebrew calendar" could be other than a luni-solar one.

But we find that Pseudo-Enoch lays down that

"the year is exactly as to its days 364,"*

that is fifty-two weeks precisely; or rather, later he leads us to infer that the year consists of 360 days and four intercalary

* Eth. Enoch, lxxii, 32.

days inserted at the beginning of each quarter, which consisted of thirteen weeks each. Certainly this is not the Jewish length of year, which varied from 353 days to 385.

More significant still, Pseudo-Enoch writes of the moon :—

“Her days are like the days of the sun, and when her light is uniform it amounts to the seventh part of the sun. And thus she rises. And her first phase in the east comes forth on the thirtieth morning; and on that day she becomes visible and constitutes for you the first phase of the moon on the thirtieth day, together with the sun in the portal where the sun rises.”

Most of this about the moon is unintelligible, but where any meaning can be got out, it is hopelessly and appallingly wrong. For a Jew to state that the new moon is first visible when rising in the east, shows that he knew nothing of the practical service of the Temple; it also shows that he knew nothing of practical astronomy. If what he meant was that the new moon *ought* to be visible in the east, he was not capable of becoming a practical astronomer. If the Temple were still standing, and he, a Jew, lived in Palestine or Parthia or elsewhere, he never attended at the feasts of the new moon, nor at any of the Great Feasts at which every male of the House of Israel should appear on pain of being cut off from the nation. Indeed, throughout the Book there is not a single reference to the Sabbath, or to any of the Great Feasts; the only reference to Temple worship is:

“They began again to place a table before the tower, but all the bread on it was polluted and not pure. And as touching all this the eyes of those sheep were blinded, so that they saw not, and their shepherds likewise . . . all the sheep were dispersed.”—(Eth. En., LXXXIX, 73–74.)

Pseudo-Enoch's calendar, therefore, was not a Hebrew one; he took no part of it from that in use in Palestine. Did he derive it from Parthia?

He did derive it from Parthia, but he modified it. Pseudo-Enoch gives 360 days with four intercalary days, one at each quarter, New Year's Day beginning at the spring equinox. The Bundahis gives 360 days together with five extra (Gatha) days, which are inserted all together immediately before the beginning of the new year, which is fixed at the spring equinox. This coincidence, in itself, would not be enough to prove the connection, but there is further that which can be no mere chance coincidence, for just as did the Bundahis, so does Pseudo-

Enoch divide the day into eighteen parts, and proceeds to lay down for the summer solstice:

“On that day the day becomes longer than the night, and the day becomes double the night, and the day becomes twelve parts, and the night is shortened and becomes six parts.”

This holds good for the Magian traditional latitude, a latitude so far north that the Iranians themselves had no experience of it, and kept only its tradition—their own tradition derived neither from Semite nor Hamite. How then did this Jew know of it? It is not the latitude of Jerusalem, why should he choose it? He had no experience of it himself, it lies hundreds of miles to his north, and if he had, he was not sufficiently a practical astronomer to make even this simple observation for himself. Nor was he mathematician enough* to work out the conditions, for he proceeds to elaborate on the proportion stated of summer day to summer night, and to elaborate wrongly by laying down equal monthly increments of day or night between the equinoxes and the solstices. Whence then did he get it? We are forced to conclude that he learned of this “traditional latitude” in Parthia and incorporated it (with erroneous additions of his own) in his Book of Enoch.

As we have seen, the Bundahis was compiled in the reign of King Valkash, the Magian convert, and owed its form to the setting of Magian religious tradition (“revelation” is the term used) in a Greek astronomical framework. I do not say that Pseudo-Enoch took his information straight from the Bundahis, though that was already in existence when he wrote, but I do affirm that he took it from some astrological work based on the Bundahis and by the same school of thought that produced it, for Pseudo-Enoch was not (mathematically) clever enough to work it out for himself. His Chapter LXXXII is a vague indication of the method in which he draws up a horoscope, based on a 364-day year and an 18-hour day.† He says:—

“Blessed are all the righteous . . . who walk in the way of righteousness, and sin not as the sinners, in the reckoning of all their

* Pseudo-Enoch was not capable of working out this mathematical problem for himself, but I do not wish that the inference should be drawn that Solomon, or Daniel, or Messahalal were incapable of doing so, if they had seen fit.

† No more than Slav. En. does Eth. En. give any actual methods by which he draws up a horoscope. The client has to come to the astrologer with a fee for the drawing up of the horoscope and for the interpretation thereof. The fees are not obscurely hinted at in Eth. En., c. 12.

days in which the sun traverses the heaven, entering into and departing from the portals for thirty days with the heads of thousands of the order of the stars, together with the four which are intercalated, which divide the four portions of the year which lead them and enter with them four days. Owing to them men shall be at fault and not reckon them in the reckoning of the whole world*; yea men shall be at fault, and not recognize them accurately. For they belong to the reckoning of the year and are truly recorded (thereon) for ever, one in the first portal and one in the third, and one in the fourth, and one in the sixth, and the year is completed in 364 days.

"And the account thereof is accurate and the recorded reckoning thereof exact; for the luminaries, and months and festivals, and years and days, has Uriel shown and revealed to me to whom the Lord of the whole creation of the world hath subjected the host of heaven. And he has power over night and day in the heaven to cause the light to give light to men—sun, moon, and stars, and all the powers of the heaven which revolve in their circular chariots. And these are the orders of the stars, which set in their places, and in their seasons and festivals and months.

"And these are the names of those who lead them, who watch and enter at their times, in their orders, in their seasons, in their months, in their periods of dominion, and in their positions. Their four leaders who divide the four parts of the year enter first; and after them the twelve leaders of the orders who divide the months; and for the 360 there are heads over thousands who divide the days; and for the four intercalary days there are the leaders which sunder the four parts of the year. And these heads over thousands are intercalated between leader and leader, each behind a station, but their leaders make the divisions. And these are the names of the leaders who divide the four parts of the year which are ordained: Milki'el, Hel' emmek, and Me'ejal, and Narel. And the names of those who lead them: Adnar'el, and Ijasusa'el, and 'Elome'el—these three follow the leaders of the orders, and there is one that follows the three leaders of the orders which follow those leaders of stations that divide the four parts of the year."

To divine means, in Hebrew, to cut, to divide, and the aim of diviners, astrologers, horoscope-makers has always been to get enough divisions in their plan of divination to enable them to get a sufficient choice of interpretation. At the beginning of our era all that astrologers could do was to divide up time amongst the deities supposed to preside over the various planets. To have simply given a planet to each day would have allowed

* I give here the unamended text.

the astrologer a very small scope in which to work his prophecies. The Alexandrian astrologers assigned a deity to each day of the 7-day week, and to each hour of the 24-hour day. Pseudo-Enoch and his Parthian colleagues have a different scheme, one which, so far as I know, is not found elsewhere. He assigns "leaders" (a pseudonym for angel or deity) to the four quarters of the year, to the twelve months and to the 18 divisions of the 360 days which in his opinion make up the complete year with an addition of 4 intercalary days. We know that this is a Parthian idea, for only in *Eth. En.* and in the *Bundahis* do we find an 18-fold division of the day.

For each of the 360 days there are heads over thousands of the order of the stars who divide the days; and there are 18 divisions of the day. This gives $360 \times 18 \times 1,000 = 6,480,000$. But if we turn again to the *Bundahis*, we find:

"As a specimen of a warlike army, which is destined for battle, they have ordained 6,480,000 small stars as assistance, and among those constellations for chieftains appointed on the four sides as leaders."

According to the *Bundahis* one of these four leaders is Haptok-ring, the seven Plough stars in the north. Pseudo-Enoch, remembering that a function of Haptok-ring was to guide the constellations and give them protection, makes these four leaders the four Wain stars, and not knowing what to do with the three Handle stars, asserts that these both "lead them" and "follow the leaders," and to identify them, mentions the little star, Alcor,* which is a close companion of Mizar, the middle star of the Handle.

Putting together the information derived from the *Bundahis* and from *Eth. En.*, I conclude that there was an attempt in Parthia to found a school of astrology in opposition to the famous one in Alexandria, based on a Græco-Magian scheme of the universe. The astrological plan, hinted at in *Eth. En.*, was a sub-variant of this.

It was not in his astrological scheming alone that Pseudo-Enoch was indebted to Greek science or Magian tradition:—

"And the first wind is called the east, because it is the first, and the second, the south, because the Most High will descend there, yea, there in quite a special sense will He Who is Blessed for ever,

* The "Test" star of the Arabs; "Jack on the Middle Horse" of English peasantry; 80 Ursæ Majoris of the astronomer.

descend. And the west wind is named the diminished, because there all the luminaries of the heaven wane and go down. And the fourth wind, named the north, is divided into three parts: the first of them is for the dwelling of men, and the second contains seas of water, and the abysses and forests and rivers, and darkness and clouds; and the third part contains the garden of righteousness."—(Eth. En., LXXVII, 1-3.)

Here we have the Iranian tradition of a threefold division of the north: "the dwelling of men" or the northern earth, the part containing "the abysses and darkness" or the northern hell, and the part containing "the garden of righteousness" or the northern heaven. From this passage alone, it is not clear how Pseudo-Enoch considered that these three divisions were disposed with regard to each other;—whether they constituted three divisions on the earth's surface, all co-planar, or whether, as with the Magi, they each occupied a plane,—heaven in the upper sky, hell hanging down into the abyss, and earth lying in between; all three planes joining on the northern horizon.

The Garden of Righteousness is in the north; the passage just quoted leaves no room for doubt on that score. But we have the same Book of Genesis before us that Pseudo-Enoch had, and that describes very particularly the garden as "eastward in Eden," and again, even more precisely, by the fact that "a river went out of Eden . . . and from thence it was parted, and became four heads," of which two were the Tigris and Euphrates. Scholars are not agreed as to whether the parting into "four heads" means the sources or the mouths of the river, that is whether Eden was situated among the mountains of Armenia or on the Persian Gulf, but the difference between these two localities is barely 10° of latitude; no such difference of opinion could justify anyone in placing it 50° or 60° to the north, within the polar regions. To Slav. En., in Alexandria or Little Russia, the Garden of Eden was still to his east, but to Eth. En., in Parthia or Media, the Euphrates and Tigris lay due west. Slav. En. had the crystal spheres of Ptolemy to aid his conception and he solved the difficulty by making a window in his third heaven open to the Garden of Eden in the east. But for Eth. En. there was no such way out.

The IIIrd Section of Eth. En. is not the only one that refers to the Garden of Righteousness, and in terms that leave no doubt that it is northerly. In the Ist, IIInd, and IVth Sections, there is such a blending of Magian and Jewish traditions on this point, that if we put it all down to the credit of the

final editor alone, we ought to acknowledge that he has woven it in so deftly that we could not take it out without dismembering,—and mangling,—the whole.

In Genesis, the Garden of Eden contained two trees,—the Tree of Life and the Tree of the Knowledge of Good and Evil.

But Pseudo-Enoch describes two Gardens of Righteousness, placed symmetrically in the north ;* one to the west, the other to the east ; one containing the Tree of Life, the other the Tree of Knowledge ; and each possessing seven holy mountains, unless, for the descriptions are not quite clear, the seven mountains are put as representing seven holy stars which sweep above both Gardens, in their perpetual circuit round the northern pole of the heavens. This would correspond to the "seven burning mountains," which were seven wicked stars imprisoned in the abyss.†

It will be evident from the foregoing that a Græco-Magian influence permeates the whole Book of Enoch. I do not think it was the only influence ; I see traces here and there of what I believe to be purely Greek tradition, but I am not conversant enough with Greek literature to track them to their sources. But this combination of Greek and Magian thought took its rise under King Valkash of Parthia, and the Bundahis was its product near the middle of the first century of our era. This Book of Enoch must then be later than the Bundahis ; how much later, I do not know, but if it were the contemporary of the Bundahis it would still be too late to have done the work ascribed to it, for ten years after our Lord's crucifixion it could not have influenced His teaching and His thought. It took its rise, moreover, in a region remote from Palestine, in Parthia or Media, and throughout the whole book I cannot find any influence that is distinctly Palestinian in its origin.

But it will be urged that St. Jude quoted from it : the quotation is undeniable. And Chapters I-V (which include that quoted prophecy) depend for their date to some extent on another apocryphal book, whose date—it is averred—is known.

* It is interesting to note that this curious superstition that the Garden of Eden was placed at the North Pole of the earth, still lingers among ourselves at the present day. In the last few years, I have come across the idea in the writings of three men of learning, belonging respectively to England, the United States and Canada. I think all would have been astonished if they had known by what route that idea had come to them.

† For these details, compare *Eth. En.*, chapters xxv, 4 ; lx, 8 ; lxi, 4 and 12 ; lxx, 2 ; lxx, 3-4 ; xviii, 12-14 (for the seven burning mountains which were seven wicked stars) ; xxxii, 1-3.

THE BOOK OF JUBILEES.

It is undeniable that St. Jude and Pseudo-Enoch quoted the same prophecy, but it by no means follows that either took the prophecy from the other. St. Jude seems to infer that the prophecy is known to all Jews. Of Pseudo-Enoch it cannot be gainsaid that he did not scruple to adopt without acknowledgment, for his own astrological purposes, the Iranian traditional latitude; have we then any reason to expect, that for theological purposes—to clothe himself with orthodoxy in the eyes of his Jewish clients—he would refrain from adopting in the forefront of his Book a well-known prophecy which had come down from the Patriarch who “walked with God.”

With regard to the date of the Book of Jubilees, Dr. Charles says:—

“The Book of Jubilees was written in Hebrew by a Pharisee between the year of the accession of Hyrcanus to the high priesthood in 135 and his breach with the Pharisees some years before his death in 105 B.C. . . . His object was to defend Judaism against the attacks of the Hellenistic spirit . . . and to prove that the law was of everlasting validity.”—(Book of Jubilees, Introduction.)

But that Law enjoined solemn feasts celebrated in the Tabernacle or Temple, dependent on the observation of the new moon and of a luni-solar year. Yet the writer of Jubilees ordains, not the feasts as commanded through Moses, but four feasts on the 1st, 4th, 7th, and 10th “new moons” as “days of remembrance, the days of the seasons for the four divisions of the year.” But these “new moons” had no connection whatever with the moon, they were simply the “quarter-days,” for each division had thirteen weeks, and there:

“were 52 weeks also exactly in the year:—Command thou the Children of Israel that they observe the years according to this reckoning—364 days. . . . For there will be those who will assuredly make observations of the moon—now (it) disturbs seasons and comes in from year to year ten days too soon. . . . They will confound all the days, the holy with the unclean, and the unclean day with the holy; for they will go wrong as to the months and sabbaths and feasts and jubilees.”—(Jubilees, VI.)*

* How little a pious and learned Jew of the very period to which Dr. Charles assigns the Book of Jubilees would have been inclined to

Such a "commandment" could never have passed current in Palestine and while the Temple was still standing. It could never have been written or accepted by a Pharisee; it must have been written by a Jew out of all sympathy with the faithful remnant; a Jew gone mad on the mystic sacredness of the number 7.

Will you, for a moment, place yourselves in mind and thought in the position of a Jew, faithful or unfaithful, but learned in the history of his people, in the first two centuries of our era? Since the days of Malachi, that had fallen which was spoken in the LXXIVth Psalm:—

"We see not our signs:

There is no more any prophet,

Neither is there among us any that knoweth how long." (v. 9.)

Neither in Temple nor Synagogue, in King's Chapel or King's Court, was there any more the word of Prophecy. If the High Priest so spoke, it was not recognized.*

When Mary and Elizabeth, Zachariah and Simeon prophesied, it was, as it were, privately, and the fact could only be known by a very few.

Then in a certain year,† on the great Day of Pentecost, when not only the Jews of Palestine, but also those of the Dispersion, "out of every nation under heaven," were gathered in the Temple at the Feast, the Apostles were "all filled with the Holy Ghost, and began to speak with other tongues; as the Spirit gave them utterance."

join in its condemnation of the month as determined from observation, may be inferred from the beautiful passage in the Wisdom of the Son of Sirach:—

The moon is also in all things for her season,

For a declaration of times, and a sign of the world

From the moon is the sign of the feast day;

A light that waneth when she is come to the full.

The month is called after her name,

Increasing wonderfully in her changing;

An instrument of the hosts on high,

Shining forth in the firmament of heaven;

The beauty of heaven, the glory of the stars,

An ornament giving light in the highest places of the Lord.

At the word of the Holy One they will stand in due order,

And they will not faint in their watches.

(Eccles. xliii, 6-10.)

* "This spake he not of himself: but being High Priest that year, he prophesied that Jesus should die for that nation."—(John xii, 51.)

† Whether this year was A.D. 29, 30 or 33 we do not know certainly.

The report that prophecy had once again been heard in the Temple of the Lord was carried back by "the Parthians and Medes and Elamites and the dwellers in Mesopotamia"; and, so far as we know, this was the last time that prophecy was uttered in the Temple; but the Jews of the Dispersion must have known that it continued to be spoken in the Christian Churches which arose in all the nations, though they knew they themselves had it not in their own synagogues.

Then came the great catastrophe which destroyed the Holy Temple, and has made them, since then, a nation without Temple or priest. Then, and afterwards, arose, I think, the great mass of apocalyptic literature. For the Jew, it was still

"Is there among us any that knoweth how long?"

but the faithful Jew devoted himself to the study of the Law and the Mishna and the Talmud was the result; the unfaithful Jew sought for the answer "in the signs of the heavens," or in pseudo-prophecy.

For one inevitable result of this restoration of prophecy to the Christian Church was the uprising of a fraudulent imitation of it. Just as Saul, when he found that "the Lord answered him not, neither by dreams, nor by Urim, nor by prophets," sought for a woman that had a familiar spirit, so was it with unbelieving Jews and heretics amongst the Christians; having lost the true, they manufactured the false.

It is a very slight thread which I have been able to follow through these "sacred books of the East," the thread of the astronomical allusions; but a thread may be as effective a guide through a labyrinth as a cable, and this thread has proved most important. It has shown that it was in Parthia, not in Palestine, that these apocalyptic books had their source, and that they were written under Magian, not Maccabæan, influences. It has shown also that they were not pre-Christian, but post-Christian—in one case, at least, many centuries post-Christian. They could not, therefore, have influenced in any way the origin of Christianity, nor do they represent the background of the Ministry of our Lord or of His Apostles.

DISCUSSION.

The CHAIRMAN expressed his appreciation of the value of the paper and general sympathy with its results. He pointed out that an example of a purely lunar calendar was to be found in that

introduced by Mohammed, who held that the divinely appointed year was of twelve lunar months ; naturally this year bore no relation to the seasons. He observed that the phenomenon of an Arctic day must somehow have been known to Homer, according to whom (*Odyssey* x, 84) in the land of the Laestrygonians "a sleepless man might earn a double wage," owing to the proximity of the paths of day and night, *i.e.*, because day followed upon day without interval. The same author in the story of the *Planctae* (xii, 61) seems to display acquaintance with icebergs ; whence we gather that various fragments of knowledge must have reached the ancients in ways of which there is no record. With regard to the quotation from the Book of Enoch in the Epistle of St. Jude, he observed that when the Ethiopic text was first discovered the identity of the book with that cited by the Apostle was doubted. The occurrence of the quotation on the first page was itself a suspicious sign, since the forger of such a book would endeavour to win credit for it by introducing any familiar quotation. He compared the case of the *De Consolatione* ascribed to Cicero. The original work was lost, but some quotations were preserved. These were introduced by one Sigonius into a treatise which he fabricated and issued as Cicero's ; the fabrication was in part detected by the fact that he introduced these quotations in the same order as that wherein they had been arranged in a collection of fragments, thereby violating the theory of probability.

Mr. M. L. ROUSE drew attention to the correspondence between the chronology of the Bundahis, and the Hebrew chronology ; the 3,000 years of negation and the 3,000 years of the reign of the good spirit might be supposed to last to the time of the Fall when the enemy came in. From the Fall until the time when the Bundahis was written would, in the Hebrew chronology, be between three and four thousand years. From the Fall until the time of the coming of Zoroaster would be about 3,000 years, and he believed that Zoroaster was a pupil of Daniel.

The SECRETARY then read letters from Professor F. C. Burkitt and Dr. J. L. E. Dreyer.

Professor LANGHORNE ORCHARD, in seconding a vote of thanks to the lecturer, said that he had been specially struck with the originality and force of two suggestions which Mrs. Maunder had made ; the first, the argument which was developed on p. 187, that Yima had migrated southward from within the Polar circle ; the second that

the tradition of the date when the promised Deliverer should come was derived from the visit of the Magi to the Infant Jesus in the 600th year after Zoroaster. He himself heartily agreed with both suggestions.

Mrs. MAUNDER thanked the Meeting for the very kind reception that had been given to her paper, and would especially thank the Chairman for the illustrations which he had given, which threw great light upon several points of interest.

She was sorry that Mr. Rouse had seemed to connect the chronology of the Bundahis with that of the Hebrew Scriptures. She had hoped that she had made it quite clear that she held the chronology of the Bundahis in very light esteem; on the face of it, it was mythical.

In reading the four Apocryphal books, she had come to rather a vivid idea of the personalities of their authors. Pseudo-Ezra was a scholar and a gentleman, an intensely patriotic Jew with whom one could be in great sympathy, even while we condemned the form in which he gave expression to his patriotic feeling, namely by the manufacture of spurious prophecy. The author of Jubilees was an arithmetical "crank"; we have many such at the present time: his idea was to work all chronology into multiples of 7: he assumed that our manners and our morals would be reformed if we could make the year an exact number of weeks. The author of Slavonic Enoch was simply an astrologer: he followed a trade, and the pious patter which he interpolates into his advertisements is exactly the kind of thing which many astrologers do at the present time; he was neither moral, nor immoral, he was simply without morals. But the author of Ethiopic Enoch stood on a different, on a lower, level from any of these: he was an ungodly man. His book was manifestly a piece of patchwork: he worked with the scissors and the pastepot. But he was ill-advised to borrow the prophecy of the patriarch who walked with God, for he was himself one of the ungodly men condemned in it.

The Meeting adjourned at 6.15 p.m.

WRITTEN COMMUNICATIONS.

Professor F. C. BURKITT, M.A., D.D., Norrisian Professor of Divinity. (1) Your argument about the land Airyana Vaego is most ingenious. But I do not know that it quite proves the historicity of "Jamshyd," or that this knowledge of the Arctic day and night came from tradition. Might it not equally well have come from what

I might call "travellers' tales"? *i.e.*, true tales of "Hyperborean" regions up North, where the days and nights are all wrong and where the climate is (now) bearable only for two months in the year. How could such a land have been created? Perhaps the good God made it good, made it the best of all lands, *but* the Enemy spoiled it with his cruel winter! In a word, it is possible to agree to your first deduction on p. 189, without agreeing to the second.

(2) (On p. 188, Note, would it not be better to say *Aramaic* instead of *Hebrew* (or *Aramaic and Hebrew*)? And it would be better to translate it "spring-rain" rather than "rain." It is the March-April rain, while the *More* or *Yore* is the Oct.-Dec. rain. Surely it is most improbable that the Pahlavi-writing should have taken a Hebrew word. All other words in Hushvaresh (Pahlavi-writing, where you write *Malkan-Malka* and pronounce *Shahún-i-Shahá*, or something like it) are in Aramaic, the French of the Euphrates Valley.)

(3) pp. 198, 199. I quite agree with you that if you read 4 Ezra vii carefully, you see that the "Christ" there spoken of is not *our* Lord, whether orthodox or modernist. But as a matter of fact this 4 Ezra vii, 28 is one of the few verses of the book quoted by Latin Fathers. St. Ambrose (in his commentary on Luke) expressly quotes it, with the name Jesus. Therefore I cannot agree with your second paragraph, p. 199.*

(4) pp. 214 ff. With almost every word of what you say about Slavonic Enoch I am in full agreement, and I think you have done a great service by showing from a quite independent standpoint the lateness of the book, not only in details, but in design and as a composition.

But why do you still believe it to have been written by a Jew or at Alexandria? I have given in my Schweich Lectures reasons for thinking that it was likely enough to have had a Christian author. This author was (as you say) chiefly interested in his own pseudo-astronomy: he puts it all into Enoch's mouth, because it is teaching for all men, apart from "revealed religion" or "covenant religion." Enoch was pre-Christian, but he was also pre-Jewish. And the Hebrew words he uses, like *Avarat*, *i.e.* 'Arāvôth, are, like the Bible-words in heathen magical papyri, mere hocus pocus and abracadabra, not like terms used by a scholar who knows Hebrew.

* This paragraph has been deleted.

(5) Why *won't* you accept Jude 14, 15 as a quotation from our Enoch? What I mean is this: you ask for criticism and opinion and your argument on p. 214 does read a little to me as if you had made up your mind beforehand that this couldn't be! But however this may be, do the writer of Enoch the justice to remember that it is all supposed to be written before the Flood: the religious institution of the Sabbath, the Law, the Feasts, are all in the future (p. 218). Only in a vision is there any mention of Israel, or Israelite religion.

(6) One other point. The Bundahish may be the compilation of Vologeses, but such compilations are generally a codification, an arrangement, of previously existing laws, customs, beliefs. The "Græco-Magian" syncretism began, surely, with the conquests of Alexander the Great; if Iranian influence be proved in "Enoch," that in my opinion does not prove the book to be post-Christian, even if the Bundahish (as we have it) be of the first century A.D. I cannot believe that "this combination of Greek and Magian thought *took its rise* under King Valkash" (p. 223).

Dr. J. L. E. DREYER, Ph.D., Director of the Armagh Observatory: May I take the opportunity to make a few remarks on the first footnote on p. 209.

Ptolemy's system of spheres is described in detail in his "Hypotheses of the Planets." There were forty-one spheres in all, including epicycle-spheres, and eight of these were "moving spheres," one for the fixed stars and seven for the seven planets. The system of spheres was very complicated, as they were not concentric, and nobody would get the idea of either nine or ten spheres from it. It was completely overshadowed by "the Ptolemaic system" of excentric circles and epicycles and was doubtless only designed for the benefit of the weaker brethren, who required something more tangible than a mere mathematical conception of circles.

Ahmed ben Musa in the ninth century wrote a treatise to prove that there was no ninth sphere.

The first mention of nine spheres is in the writings of the Brethren of Purity in the tenth century; it is called the original mover, and a reference is made to the saying in the Koran LXIX "and eight angels carry over themselves the throne of thy Lord." This is next mentioned by Al Betrugi (Alpetragius) at the end of the twelfth century. The idea was evidently derived from

Aristotle's *πρῶτον σῶμα*, though that had not been supposed to be anything but the sphere of the fixed stars itself.

After Al Betrugi the belief in the ninth sphere or *Primum Mobile* seems to have become established. The tenth sphere of Dante is a purely theological idea, but in the system of King Alfonso of Castille the eighth sphere produces the (imaginary) irregularity of the precession of the equinoxes, the ninth the progressive motion of these, and a tenth is introduced as *primum mobile*.

Whatever be the age of the "Slavonic Enoch," the passage in question must date from the second half of the Middle Ages.

LECTURER'S REPLY TO WRITTEN COMMUNICATIONS.

I will take Professor Burkitt's letter paragraph by paragraph.

(1) A "true traveller's tale" implies a real traveller as well as a real tale. Some man must have experienced Arctic conditions before they could have been correctly described. The Iranians called the man who did this "Yim." It is immaterial whether he called himself by that name or not.

(2) I thank Professor Burkitt for his correction, and have altered the word "Hebrew" into "Aramaic."

(3) Here again I have acted in accordance with Professor Burkitt's suggestion, and have deleted the sentence which he has criticized.

(4) With regard to the nationality of the author of Slav. En., I necessarily accepted, as a preliminary hypothesis, Dr. Charles' view that he was a Jew. I did not come across anything in the book which seemed to me to give serious reason for changing this view, and the references to "chalkhydres" and to animals with crocodile heads, appeared to show a connection with a Greek-speaking people on the Nile. But when I came to the conclusion that Slav. En. was by a late astrologer, I knew that—as the Jews themselves might express it—he was "external" to both the Jewish and the Christian faiths. For an astrologer is necessarily a believer in spiritual influences from the stars and planets directing the destiny of men: in other words, he was practically a pagan, and therefore neither faithful Jew nor faithful Christian. I was not concerned to decide whether he ought to have been "cast out of the synagogue" or "excommunicated from the Church."

(5) With regard to Eth. En. I am sorry that my argument on p. 214 reads as if I had already made up my mind. I thought I was

merely stating as plainly as possible the problem that lies before us for solution. There are *three* possible solutions: St. Jude may have invented the prophecy; or the author of Eth. En. may have done so; or it may have been current before the time of either. This last solution is the one I am myself inclined to accept. St. Jude need never have come across Eth. En., nor the author of Eth. En. have ever read St. Jude's Epistle.

(6) The Græco-Magian syncretism of which I speak on p. 223 is not a general influence but a particular one. I wrote "*This* combination of Greek and Magian thought"; it was the frank adoption of the astronomical system due to Hipparchus to which I was referring. This could not have taken place much before the date of the compilation of the Bundahis.

I am greatly indebted to Dr. Dreyer for his comments, and supported by the facts that he brings forward, venture now to record the opinion which I lacked the courage to express before; viz., that Slav. En., so far from being a pre-Christian work is not only a Mediæval production, but a late one at that.

A. S. D. MAUNDER.

568TH ORDINARY GENERAL MEETING,

HELD IN THE SMALL HALL, THE CENTRAL HALL,
WESTMINSTER, ON MONDAY, APRIL 19TH, 1915, AT 4.30 P.M.

T. G. PINCHES, ESQ., LL.D., M.R.A.S., IN THE CHAIR.

The Minutes of the preceding Meeting were read and confirmed.

The SECRETARY announced the election of Mr. John Lee and Mr. J. Norman Holmes as Associates of the Institute.

The CHAIRMAN introduced the Rev. James Hope Moulton, M.A., D.Lit., D.C.L., D.D., D.Theol., Greenwood Professor of Hellenistic Greek, and Indo-European Philology, Manchester University, and invited him to deliver his address on "The Zoroastrian Conception of a Future Life."

*THE ZOROASTRIAN CONCEPTION OF A FUTURE
LIFE.* By the Rev. Professor JAMES HOPE MOULTON,
D.Lit., D.C.L., D.D., D.Theol.

THE Parsees, the modern exponents of Zoroastrianism, are a small community, less than 100,000 in number, who are to-day mostly concentrated in Bombay and its neighbourhood. They found a refuge in India centuries ago, having been driven out of Persia, their own country, by the murderous hordes of invading Islam. The faith for which in Persia they had bravely endured a bloody persecution, to preserve which unsullied the faithful remnant of them were ready to leave their own land and go forth into the unknown, is almost as old as Judaism, and for loftiness and purity of doctrine towers high above all non-Christian religions with that same exception alone. It is, as its Founder left it, absolutely monotheistic, free from any unworthy views of God, earnest and practical, and untainted by asceticism; and if in later times it fell below its Founder's too lofty ideals, and became corrupted with ritualistic puerilities and a worship of saints and angels which seriously compromises monotheism, it may be doubted whether it goes beyond the corruptions of Christianity in many of the more superstitious corners of modern Europe. The Parsees to-day are the most enlightened and progressive community among the natives of India, charitable and public-spirited, and free from

all the ethical shortcomings which are chargeable upon Hinduism and Islam alike. They refuse to accept proselytes; and they do but little to cultivate intensively a faith which in its primitive purity might be made a real power for the uplifting of its people. They tend to religious indifference, and a great many of them know but little of their own heritage. Under the stimulus of Western interest in and study of their ancient faith, they are improving in this respect; but secularism of practice is a conspicuous peril among them, as it is in the nominally Christian communities of the West.

So much of introduction seems demanded, but I pass from it with relief, inasmuch as I can here only speak at second hand: I have never been in India, and have studied the early history of this great religion to the practical exclusion of its later developments. Before I pass to the special heading of this paper, I must add a few words of summary to explain my presuppositions. I do not set these down as objective facts in all cases, for the evidence has been very differently read. The arguments by which I support my own reading have been set forth, first summarily in a little book in the "Cambridge Manuals" series, *Early Religious Poetry of Persia*, and then with considerable elaboration in my Hibbert Lectures on *Early Zoroastrianism*. The latter work contains a translation of the primitive classics of Zoroastrianism, the *Gāthās* or Hymns of Zarathushtra, together with a few Greek texts which contain valuable information for our purpose. To this book I may perhaps refer any present who wish to know on what authority I make sundry statements which are necessarily dogmatic in form because of lack of time.

I shall keep to the original name of the prophet whom the Greeks and Romans called Zoroaster. Most people probably know the name Zarathushtra from the title of a notorious book by Nietzsche, who took this name in vain, as he took others that are holier. I need not inform you that Zarathushtra himself never sat for his portrait to Nietzsche, and that if you have read *Also sprach Zarathustra* you will find nothing in this paper to remind you of that rather fascinating but eminently mischievous book. The time of Zarathushtra's mission is much disputed. Parsee tradition dates him 660 to 583 B.C., but opinion seems to be strengthening in favour of an earlier time; and we shall probably be not far out if we conceive of him as dating back to the tenth century or so. He was possibly a native of Media, but his prophetic activity was much further east; and the seclusion of his labours in a region very far from

the beaten tracks of ancient civilisation is the best explanation of the practical absence of reliable traces of his teaching till a much later date than sundry theorists have assumed. His Hymns (Gathas) are very scanty in extent and extremely difficult of interpretation, but we must refer every problem of Zoroastrianism proper to their arbitrament. For the bulk of the Avesta, of which the Gathas are much the oldest part, presents us with a most obvious declension from Zarathushtra's teaching in every particular. This deviation comes in two well-marked stages. First, after some short prose pieces in the archaic dialect of the Gathas, comes the mass of the verse Avesta, the *Yashts* and the later *Yasna*. Here we have, in metre and in thought and style, what is closer than anything in the Avesta to the kindred hymns of the Rigveda, though the Gathas are in a dialect much nearer to the Sanskrit. The religion presumed here is virtually Vedic. The old polytheism professed by the united people, who (perhaps about the middle of the second millennium) divided into Indian and Iranian, has returned, now that the mighty force of the Prophet's personality has been withdrawn. During the fifth century (as I believe) a new force began to work with the coming of the Magi, a sacred tribe in Media, who had made a bold bid for political power during the reign of Cambyses, but were put down by the warrior Aryans under the great Darius. They seem to have set themselves to win spiritual power by way of compensation; and in a couple of generations, perhaps, they had made themselves the indispensable priests of a religion very different from their own. They adapted to it their peculiar ritual and priestcraft, developed its theology along new lines, and completed the canon of the Avesta by adding prose books containing ritual, cosmogony, and other elements which we cannot identify, since so small a part of the original Avesta has come down to us.

I have thought it necessary to describe in brief the stratification of Avestan religion and religious documents, because without this basis I cannot discuss the relation of Zoroastrian eschatology to other eschatologies which interest us more closely. I proceed after this preface to take up the specific doctrine mentioned in the title of this paper.

With one very notable exception, all the characteristic and valuable elements in Zoroastrian eschatology come from Zarathushtra himself, and are to be derived from his own Hymns. There is no doubt that he worked up inherited material, developed into doctrine what had been mere mythology, tacitly ignored what did not fit into his highly abstract and spiritual

system, and made much of every suggestion that carried possibilities of higher use. The recognition of this does not alter the claim of our great prophet to have been the creator of a majestic and highly ethical system whereby a future world should redress the uneven balance of the present world. I will reserve for a while my comments on the amazing fact that a Gentile prophet of so early a date should have soared so high into the mysteries and seen Truth so clearly.

I have said that Zarathushtra used traditional mythology. Not a few elements in the machinery of his doctrine of the Hereafter can be recognised as inherited myth, partly by parallels known from kindred systems, and partly by the patent fact that they are picturesque excrescences upon the system, never logically worked out, and only retained so far as they can be used to illustrate and enforce ideas wholly independent of them. The eschatology which Zarathushtra inherited was almost entirely mythical in its basis. The religion of the Aryans—I use the word in its strict sense, of the tribes which divided into Iranians and Sanskrit-speaking Indians—was mostly a worship of nature powers; and its Hereafter was built up of myths in which the daily miracle of the new-risen Daystar played a large part. Zarathushtra's basis was wholly ethical. The Problem of Evil was central in all his thought: it was forced upon him by personal experience, during his sufferings at the hands of brutal nomads who raided the cattle and took the lives of his peaceful agriculturists. His was the problem of the 73rd Psalm, the problem with which all Europe is wrestling in these days of war: Why is brute force allowed so often to triumph over justice? Why is "Right for ever on the scaffold, Wrong for ever on the throne"? Those who fairly face that question must either sacrifice Theism—to which a good and a just God is essential—or take refuge in a Theodicy. Zarathushtra believed so firmly and passionately in God that he caught the vision of a world "in which dwelleth Righteousness," enthroned for evermore.

To understand Zarathushtra's Hereafter, therefore, we must understand his doctrine of Good and Evil. His name for God, which had been most naturally assumed to be of his own coining—it is remarkably characteristic of him—has now been proved centuries older than his time. *Ahura*, "Lord," the Vedic *Asura*, was still in the Gathas the title of spiritual beings, abstractions who are really part of the hypostasis of God. To this was added the attribute *Mazdâh*, "Wise"; and in Western Iran, upon the old Persian inscriptions of Darius and his successors, the com-

bination is fused into one word, *Auramazda*, the *Ormazd* of later days and *Oromazdes* of the Greeks. The "Wise Lord" was for Zarathushtra Creator of all things, beneficent, all-knowing. The massy heavens are His robe, and infinite space His dwelling. In the beginning we read,

"The two primeval Spirits, who revealed themselves in vision as Twins, are the Better and the Bad in thought and word and action. And between these two the wise once chose aright, the foolish not so."*

The two spirits are expressly called *Twins*, but the term is not developed: it was later Mazdeism that found a parent in "Endless Time." Nor are we told what was the relation of the "Better Spirit" to Ahura Mazdâh. Strict logic should equate them; but whatever the later writings of Parseeism may do, the Gathas never suggest any such equality between Ahura Mazdâh and the Evil Spirit as the name *Twins* suggests. Are we to say that the whole verse is a detached philosopheme about Good and Evil and how they are differentiated, the one the simple negation of the other, a yes and a no that are linked like twins? This would release us from the necessity of bringing Mazdâh into express relation with the statement which quite impersonally sets forth the genesis of evil. Such a consideration gains weight from the generally unobserved fact that Zarathushtra never *names* the Evil Spirit. A casual epithet, "enemy," is once applied to him, and this is taken up and turned into a proper name in the Later Avesta, where *Angra Mainyu*, "Enemy Spirit," crystallises into one word, like *Auramazda*, and gives us the ultimate *Ahriman*, the Greek *Areimanios*. But as far as the Gathas go his name might have been *Aka Mainyu*, "Bad Spirit," for that does occur twice! In the Gathas Evil is far more often called *Druj*, "Falsehood"; but there is less personification than we find in John Bunyan's thumbnail sketches of a virtue or a vice. Abstraction was of the essence of Zarathushtra's processes of thought.

In this paper I am not concerned with delineating Good and Evil in themselves, but with describing their present relation and future destiny. Parseeism is generally credited with being "dualistic." If we confine the epithet to the system of the Magi, with its mechanically balanced antitheses of white and black, I have no objection. But in the Gathas I can see no

* *Yasna* 30³. (I quote the Gathas from my own version in my Hibbert Lectures.)

more dualism than in the New Testament. Evil begins with the deliberate choice of a free agent, who thereby constitutes himself the enemy of the Good Spirit: he is the complete opposite of him in everything. I may quote the stanza where the epithet "enemy" is used:—

I will speak of the Spirits twain at the first beginning of the world, of whom the holier thus spake to the enemy:
Neither thought nor teachings nor wills nor beliefs nor words nor deeds nor selves nor souls of us twain agree.*

The fight between the two Powers ranges over the whole field of thought, word and action, and never ceases. But Zarathushtra never betrays an instant's questioning as to the result. He wistfully prays, in the hour of defeat and oppression, that he may have some token of God's favour in this life:—

Shall I indeed earn that reward, even ten mares with a stallion and a camel, which was promised unto me, O Mazdah, as well as through thee the future gift of Salvation and Immortality? †

Over and over again we hear the ringing note of certainty as to the ultimate triumph of the good cause and the ruin of all who embrace the evil, however confidently they may shake their mailed fist here. There is no sort of equality between the two Powers. As a merely speculative point, we might have to admit that Mazdah has his omnipotence limited during the present æon. Zarathushtra might have answered man Friday's question, "Why God not kill debbil?" by saying that He *cannot*, till the hour comes. Christianity says rather that He *will* not, since Evil is not to be destroyed by force, but by love. Both agree in declaring that He will destroy it at the set time. "In vain doth Satan rage his hour": if he does not know that he fights vainly, it is only because ignorance is one of his attributes, as the antithesis of the Wise Lord. This, however, is a touch characteristic of the Magian dualism, which is so much concerned to make the attributes of Ahriman exactly balance those of Ormazd, that it has to enfeeble the Evil Spirit lest he should usurp faculties of Ormazd. It is Magianism also which fixes an exact term for the strife. The conflict is a gigantic game of chess, with a black piece equal and opposite to every white one. And the formula is, as Mrs. Maunder

* *Yasna* 45².

† *Yasna* 44¹⁸.

excellently put it, "White to play, and mate in so many millennia." Zarathushtra is not interested in such precision. He takes Evil very seriously indeed, and finds it anything but an "ineffectual angel" of darkness, to be rendered impotent by words of a Gatha muttered as a spell, and by the killing of frogs and ants. The weapons of his warfare are prayer and pure thought, words of truth, and the simple husbandman's industry. Nor does he think of millennia: he clings to the hope that the Kingdom of God is at hand, and he will see it. Zarathushtra accordingly began where the Apostles began ten centuries later. It is of the nature of enthusiasm to see a distant landscape very near and clear; and it is a condition of humanity, if it sees the future at all, to see it foreshortened, the far away mountain peak and the near hill melting into one outline. We have realised this especially in the recent keen discussion on the eschatology of the New Testament. But there is a suggestive contrast between the paths of the two religions when the flight of time dimmed the brightness of the Advent Hope. Zarathushtra left no successors who could catch up and wear his mantle. His followers called him Lord! Lord! and gave him worship which would have horrified him unspeakably; but they could not do the things he bade them, for these were too simple and too high for them. When the promise of the End was deferred, and all things continued as they were from the beginning of the Creation, the Magi devised an elaborate system of world-ages, which fix the Renovation for the year A.D. 2398. We need not laugh at them: they were wiser than some prophets of our own, many of whose dates for the End have come and gone already. But we may compare instructively the very different course taken by Christianity when "the fathers fell asleep," and still the Promise of the Advent was delayed. The very delay taught new lessons, and the Church took up new conceptions of work to be done. It was one example among many of the fact that Iran had but a single isolated Prophet, while Israel and Christianity had a "goodly fellowship" in bright succession.

It is time to describe more in detail the "Great Consummation" as it revealed itself to Zarathushtra. The destiny of individuals comes later: it was indeed for him only an appendage of the universal event. As in the New Testament, but still more conspicuously, the Day comes with Fire. Fire is throughout the Parsee system the special symbol of God's holiness. Its particular form was that of a great flood of molten metal, let loose upon the universe. The righteous, as

later fancy put it, would pass through the flood as through warm milk, but the wicked would be burnt up. The Evil Spirit and his hosts would be destroyed, and his realm purged. The figure is an example of the use of mythology, of which I spoke just now. The fire was an unmistakable survival from Aryan antiquity, and Zarathushtra's use of it is characteristically incomplete; the machinery of individual judgment, as we shall see, is altogether inconsistent with it. But this figure and that alike illustrated the thought Zarathushtra meant to drive home; and he cared little enough whether the figures were congruous with one another. What mattered for him was that men should be induced to fight manfully on the side of Asha, the Right, in confidence that the end of the campaign would be the eternal victory of God over evil of every kind.

The human agents of the "Renovation" are called *Saoshyantō*, "they who will deliver"; and Zarathushtra unmistakably means himself and his immediate helpers, King Vishtâspa and the noble brothers Frashaoshtra and Jâmâspa. As I said just now, the consummation was expected within the Prophet's lifetime. When that generation passed away, the term had to change its meaning; and the Saoshyants became a succession of three miraculously born sons of Zarathushtra, to appear at intervals of a thousand years, the last of whom was to usher in the End.

At this point we necessarily pass from the universal to the individual. What was to happen to the wicked when at last slow Vengeance overtook them? There are, I suppose, just three possibilities which come within the range of our human thought—which is not equivalent to denying the possibility of a fourth, inconceivable to our faculties as a fourth dimension of space. They may be annihilated or reduced to unconsciousness at death, or at some time after death; their punishment may end after an interval in restoration, or it may go on for ever. Among these there is no sign that Zarathushtra himself thought of any but the last. When later Parsee speculation pictured hell itself purified and added to the universal realm of Mazdah, it may conceivably have built on lost Gathas. We are not obliged to demand consistency in this matter: the imagery used will quite naturally vary with the practical lesson which a prophet is urging at the moment. Even in the New Testament the upholders of each of the three doctrines—Conditional Immortality, Universalism, Eternal Retribution—have been able to find texts which *prima facie* support their particular view. But in our extant Gathas Zarathushtra is perpetually

insistent that the "followers of the Lie" shall be to all time dwellers in the "House of the Lie," tormented there eternally. It is hardly likely that it ever occurred to him to be tender towards those who not only refused his gospel, but savagely persecuted his converts. For him God is Righteousness and Truth, but His Fatherhood, hating nothing that He has made, lay below this great prophet's horizon. He was accordingly less perplexed than we with the problem of retribution: the enemies of humanity had earned their doom, and he can even take fierce delight in the contemplation of it. If later Parsee thought, under the impulse of Magian systematising, figured the Molten Metal as destroying hell, it was not tenderness towards Ahriman and his followers, but only a logical development of the requirement that the victory of Ormazd must be complete. The eschatology of the Pahlavi texts* is frankly universalist, except for the very worst sinners, who have turned themselves into demons and share the fate of Ahriman and his hosts. All this seems to be without warrant in the Gathas and is best interpreted as the outcome of Magian ideas.

We return to the Gathas to notice another conspicuous feature in the imagery of judgment. This is the "Bridge of the Separater," over which the dead have to pass. Originating probably in a primitive conception of the Milky Way as the path of souls, the idea was developed mythically; and Zarathushtra found it in possession as a bridge which shrank to a knife-edge width when the wicked essayed to cross, and expanded to a broad highway for the righteous. In this form it survived through later mythology, and was borrowed by Islam as Al-Sirât's Arch. It spanned the abyss, into which the wicked fell. But we may be certain Zarathushtra never meant it to be a real test. The "Separater," whose office was closely attached to it, was a judge of conduct. Later doctrine probably kept up the spirit of the Founder's idea when it pictured the righteous judges of souls occupied in weighing the merits and demerits of each soul before it traversed the Bridge, which thus becomes superfluous except as a picturesque and impressive emblem. It is at the Bridge that the remorse of the sinner is to come to a climax; but that is clearly because he stepped upon it as a newly-doomed man. Zarathushtra gives us no account of the actual happenings at the Bridge, nor does he stay to describe it. That may be simply because it was a

* See it presented in Dhalla *Zoroastrian Theology*, pp. 291 ff.

familiar picture which he retained, not a crucial conception of his own thought. Nor does he bring the Bridge into any relation with that other inherited emblem of the Molten Metal. We might conjecture that he thought of the latter as an ordeal, by which the Separator did his work. The Pahlavi theologians separated the two altogether, removing the Molten Metal to the future Renovation, when the damned will return from ages of penal suffering, to be finally cleansed by the burning flood. Zarathushtra in his Hymns is not compiling a treatise, and we must not press his silences too far. But it does not seem that we should solve the inconsistency in this way. The Bridge and the Metal are only imagery for him, and we need not drag them into system, any more than we should try to paint the imagery of our own Apocalypse of John.

I may leave at this point the special doctrine of Retribution, and turn to the principles governing the Judgment as a whole. I referred just now in a sentence to the Weighing before the Bridge. This was an old Iranian idea. In Persian jurisprudence a culprit was always supposed to be judged on the balance of his whole record, being acquitted if his good deeds outweighed the bad. Since, moreover, the idea was ethical, we should expect to find Zarathushtra accepting it. In that case we should regard the "Separator" as essentially a Judge of souls, like Minos, Aeacus and Rhadamanthys in Greek mythology, whose work it is to divide the good from the bad. The Iranian tradition was ready with the names of the triad of angels who preside over the weighing. The chief of them was the Light-genius Mithra, who in the Later Avesta takes a rôle which Zarathushtra himself might have warmly approved. But in the Prophet's day Mithra was the chief divinity of savage nomads who oppressed the settled agricultural population, and Zarathushtra will not acknowledge him: indeed, as I personally believe, he made him chief of the *Daevas*, the old Aryan nature-powers whom the reformer dethroned and made into demons. The "Separator" before the Bridge was none other than Mazdah. This appears from Zarathushtra's declaration to his chief lieutenant, Jamaspa. In Paradise, he says:

I shall recount your wrongs . . . before him who will *separate*
the wise and the unwise through Righteousness (*Asha*),
his prudent counsellor, even Mazdah Ahura.*

* *Yasna* 46¹⁷.

That Mazdah is to "judge the world in righteousness" is what we should expect Zarathushtra to teach; nor is it less in keeping that he is himself to plead before the Judge, the advocate of his faithful followers, and accuser of those who wronged them. A vivid anthropomorphic figure pictures the Judge as pointing to each man his destiny:

Of thy Fire, O Ahura, that is mighty through Righteousness, promised and powerful, we desire that it may be for the faithful man with manifested delight, but for the enemy with visible torment, according to the pointings of the hand.*

The Fire—that is, in this context, the Molten Metal—is to follow the sentence, as the first element in the execution of Mazdah's decree. Or, as suggested above, it may be a figure describing the supreme test, independent of the Weighing, and associated with the "pointings of the hand" as the declaration of its result.

There is one curious sequel of the Weighing which has been proved to go back to Zarathushtra himself. The soul was adjudged righteous or wicked according to the balance of merits and demerits in thought, word and action. Pahlavi theology insisted very strongly on the nicety of the balance: the estimation of a hair—to be more exact, an eyelash—was enough to determine the issue of heaven or hell. But what if the scales exactly balanced? For this case a limbo was provided, called *Hamistakan*, in the Later Avesta *misra gātu*, "the place of the mixed." Here, they said, in a place located between earth and the first heaven, souls would feel the alternations of cold and heat due to the seasons, until the Renovation brought their dubious position to an end. There are two stanzas in the Gathas which allude to this middle state, but without naming or defining it. The idea has been taken up in the Koran (Sur. 7), and (for once) decidedly improved upon. If we knew more of Zarathushtra's own system, we might be able to say that he had not only recognised the biggest of all problems of the Future, but even done something towards its solution. But if he did, posterity ignored his contribution. No one who knows Zarathushtra's sign manual will find it on the Parsee *Hamistakan*.

One other dogma of later Parseeism, partially rooted in the

* *Yasna* 34¹.

Gathas, must be named in connexion with the Weighing of Merits. Zarathushtra taught that men can lay up treasure in heaven :

And this, O Mazdah, will I put in thy care within thy House
—the good thought and the souls of the righteous, their
worship, their piety and zeal, that thou mayst guard it,
O thou of mighty dominion, with abiding power.

Upon this foundation the Pahlavi Rabbinites built the more dubious dogma of a treasure-house where were stored the supererogatory good works of the saints, for the benefit of those whose credit was inadequate. How this doctrine was squared with that of Limbo is not clear : the saints, as spiritual millionaires, might surely have spared of their superfluity enough to empty Hamistakan, when the weight of an eyelash was enough to do it for each one !

The deepest thought of Zarathushtra as to the future state is that each man's destiny is determined by his own self. Of the "future long age of misery, of darkness, ill food, and crying of woe !" the prophet says :

To such an existence, ye followers of the Lie, shall your own
self bring you by your actions.*

And again—

Their own soul and their own self shall torment them when
they come where the Bridge of the Separater is, to all time
dwellers in the House of the Lie.†

Zarathushtra called heaven sometimes "the Best Thought." He anticipated Marlowe and Milton in the truth which the Satan of *Paradise Lost* enunciates—

The mind is its own place, and in itself
Can make a heaven of hell, a hell of heaven.

The centrality of this doctrine in the Gathas enables us to put Zarathushtra's own seal on the most beautiful thing in the Avesta, the fragment on the passing of the righteous soul,‡ on which I wish there were time to linger. The climax of it comes when the soul, flying away to the South on the morning of the

* *Yasna* 31²⁰.

† *Yasna* 46¹¹.

‡ The *Hadhokht Nash*, generally known as *Yasht* 22. I have given a free verse paraphrase of this text at the end of my *Early Religious Poetry of the Persians*.

fourth day, meets a lovely damsel wafted towards him on a fragrant south wind.

Then spake to her with question the soul of the righteous man :
What maiden art thou, fairest in form of all maidens that
ever I saw ?

Then to him replied she that was his own self : O youth of good
thoughts, good words, good actions, good self, I am the self
of thine own person.

She tells him that by worship and almsgiving he had made her ever fairer and more adorable. The fragment is imperfect when it comes to describe the passing of the wicked soul : it is, one fears, not probable that literary feeling forbade the author to spoil a gem ! But Pahlavi books come to the rescue and tell us that the wicked soul, as it fled to the cold and demon-ridden North, was met by its own self as a hideous old hag. Every detail is duly reversed in the characteristic Magian way. But in both parts of the picture, if in the mechanically balanced strokes of the brush we recognise a Magian painter, the conception of the *Daenā* or Self as creator of destiny goes back to the genius of Zarathushtra.

The story of the destiny of the soul must be rounded off with a glimpse of the heaven into which the righteous enters : we began this survey with the hell wherein the wicked abides his punishment. The next stanza in the fragment just described tells us that the soul stepped successively into the Good Thought Paradise, the Good Word, the Good Deed, and finally to the Endless Lights. There Ahura Mazdah bids them bring him "spring butter," the nectar and ambrosia of the Parsee heaven. This is all in the spirit of the Gathas, where heaven is variously called the House of Song, the Best Thought, the House of Good Thought, the Kingdom of Good Thought, the Best Existence, etc. And if only in antithesis to the description of the House of the Lie quoted above, we may picture Zarathushtra's House of Song to be a place "of bliss, of light, of dainty food, and singing of joy."

What then about the body ? It is here that the great gulf fixed between Zarathushtra and the Magi is most apparent. Those who know nothing else about the modern Parsees know how they dispose of their dead. The corpse of a good man is the most unclean thing in the world : it represents the victory of the Death-fiend over a creature of Mazdah. Hence it must never touch the sacred earth or waters, but be devoured by

birds of prey. Herodotus tells us that here the Magi differed from the Persians, for the latter covered the corpse with wax and buried it. This answers both to the silence and the obscure speech of the Gathas. These have no hint that a corpse polluted the earth. On the contrary we read that Aramaiti, the archangel of Piety, who presides over the earth, "gave continued life of their bodies, and indestructibility."* Earth, then, is so charged with life-giving potency that she will at last give a body to those who sleep in her bosom. There is nothing more to be got out of the Gathas here, but later Parseeism develops very elaborately the stages of the final Resurrection, when the hitherto disembodied souls will receive new bodies and enter the life of the new world, all except those sinners who have made themselves into veritable fiends. There are many other features of later speculation which would repay mention, but my time has gone, and I must only deal briefly with one subject of special importance to us.

It is an obvious consequence of the facts and dates presented that Zarathushtra's was the earliest voice to preach an ethical doctrine of immortality, unless Egypt can make good a counter-claim. It is, moreover, a doctrine to which Christianity itself would not wish to offer any protest. We have much, very much, to add from the teaching of Him who brought life and immortality to light out of the mists of reverent intuition in which even a prophet's apocalypse left the great hope of mankind. But it is a very wonderful thing that one solitary Eastern thinker should have travelled so far at least six, and more probably ten, centuries before the day when all graves were opened by the emptying of one. We rather tend to break out with Joshua's exclamation, when jealous for the sake of Moses. We are so accustomed to think of Israel as on the mountain-top to catch the first rising of every new light in religion, that we can hardly understand how immortality should have been unthought of till the Old Testament canon was nearly closed. Nor is this all. There have been many scholars—not, however, among Zoroastrian specialists, but exclusively, I think, from the camp of Old Testament study—who have urged that contact with Zoroastrianism gave the first impulse to the doctrine in Israel. I have always been attracted by the idea, which gives a new wealth of meaning to the opening verses of *Hebrews*, and to that great phrase in which Paul

* *Yasna* 307.

tells us that the Christian Church is the heir of all the ages.* But more than twenty years' study of early Zoroastrianism has for me reduced near the vanishing point any possibility that the Jews in the Captivity could have come in contact with the pure teaching of Zarathushtra, which alone was lofty enough to contribute anything to Israel's spiritual riches. In Babylon and Media they could meet with Magi who appealed to Zarathushtra's name. But I cannot find that in that age the real teaching of the Gathas was well enough understood to stand out above the kind of doctrine which the priests taught. Archaic in language, extremely difficult and ambiguous even to modern scientific research, the Gathas were a sealed book, even for the men who faithfully transmitted their words as potent charms against the devil.

But the comparison of this great thinker's divinely guided intuitions suggests one final reflection. Zarathushtra threw himself upon God's justice, and thence deduced another world as the only answer to the question whether the Judge of all the earth must not do right. Those who came before him had deduced Immortality from God's power, and the analogy of Nature. But even Zarathushtra's was not the highest way; and all experience tells us that the way is even more important than the end when men set out in quest of Truth. Immortality had yet to be deduced from the Love of God, and the realising of that love was a far more important element in Israel's training than the very hope of heaven could be. So it was that when earthly power and glory had long vanished, and the oppressed people of God could no more even call the land of promise their own, the saints who wrote the later hymns in the Book of Psalms came to realise and teach that God Himself is more than enough to satisfy man's need, and that if He can be addressed by man as "my God," man cannot be left by Him to extinction in the grave.† Hence it is that Zarathushtra's sublime faith is to-day held, and held imperfectly, by a few myriads who will not accept a proselyte, while the faith of Israel prepared the first missionaries of a religion which claims to bring the ultimate truth to the whole world.

* 1 Cor. x, 11, "unto whom the tribute of the ages has come as our inheritance." (So I translate, on the lexical evidence of papyri and inscriptions of later Greek.)

† May I refer to my Fernley Lecture, *Religions and Religion* (London 1913), pp. 75-79, for an expansion of this argument?

DISCUSSION.

The CHAIRMAN, in opening the discussion, desired to express the thanks of the Meeting to Professor Moulton for the important paper to which they had all listened with so much interest and profit.

Mr. WALTER MAUNDER: I should like to take the opportunity of expressing my thanks to Professor Moulton for his paper, both on behalf of the Meeting, and on my own personal account, and I should also like to thank him in your name for his ready consent, when I approached him about a year ago, to come and deliver this address on this day.

Some three or four years ago, Professor Moulton gave me my first introduction to the Persian sacred books, by asking me my solution of an astronomical problem arising out of a reference in the Bundahis. I first of all read Professor Moulton's charming little book on the *Early Religious Poetry of Persia*, and then he lent me the Bundahis, of which, as the Meeting will have learnt from the paper read here a week ago, my wife made much greater use than I was able to do.

There is one point about the Zoroastrian faith to which Professor Moulton has alluded in his paper, which seems to me of fundamental importance. About a year ago, I was talking with one of our Associates, an eminent surgeon in the Indian service, who, by his skill, has been able to confer great benefits upon leading members of all the principal faiths of India. Parsees, Sikhs, Mahometans, Hindus, and in that way has come into a more intimate and friendly relation with all of them than perhaps any one else of whom I know, and I was telling him that, from certain astronomical references that I had come across in some of the Parsee books, I had concluded that at one time in the distant past, the Zoroastrian faith had prevailed in the Panjab, but that, so far as I knew, there was no record of Zoroastrianism being driven out of the Panjab, though it must have been. My friend replied, "Zoroastrianism and Hinduism cannot tolerate one another; one of the two must go down, for there is this fundamental difference between them: the Zoroastrian believes in the Resurrection, but the Hindu looks for Re-incarnation." The difference is fundamental, because faith in the Resurrection means that we look for eternal life as the

gift of God; a belief in Re-incarnation, the doctrine of Karma, means that we expect, little by little, through countless ages, to improve ourselves and to earn our reward.

The Rev. J. J. B. COLES felt that the paper to which they had listened that afternoon was a distinct contribution to the comparative study of religions. It was helpful to note that every system of theology, ethics, or philosophy had come to grief; there must be some underlying scientific reason. There were now only about 100,000 Parsees left, most of them in or near Bombay; what has been the cause of the deep decay of Parseeism? Those who had been in India, as he had been for ten years, would have no difficulty in suggesting the cause. The Parsees to-day were among the great commercial leaders of India, and when a religious people take to commercial pursuits and money-making, their religion becomes corrupted. This was the way that the religion of Israel had become corrupt, and it is a proof of the inspiration of Holy Scripture that no other nation has preserved as their own sacred books a record which so utterly condemns their own conduct. The indifference to their exalted doctrine, which we note in the Parsees of to-day, is due to their commercial spirit. The covenant made by God with Noah was for the purpose that men might not congregate in great cities, but should spread themselves freely over the whole world.

Professor LANGHORNE ORCHARD thanked Professor Moulton for his paper. The interpretation which the Greeks gave to the name Zoroaster, "Living Star," was most appropriate to him, for he was a light for his time. As to the date of Zoroaster, he must concur with Mrs. Maunders rather than with Professor Moulton. Nothing invalidated the arguments by which she assigned him to the seventh century B.C. Zoroaster's great work was that he taught that the character of a man determined his destiny. One implication from the paper he did wish to traverse, namely, that the doctrine of immortality was unknown to the Jews until shortly before the closing of the canon of the Old Testament. Our Lord had shown clearly that the doctrine of immortality was contained in the revelation made to Moses at the burning bush, "God is not the God of the dead, but of the living." The creed of Zoroaster was a noble one, but he could add nothing to the Jewish and Christian religions, for these came direct from God.

The Rev. JOHN TUCKWELL wished to join in the expression of thanks to Professor Moulton for his very interesting paper. At the same time he could not help thinking that very little value could be attached to Zoroastrianism as a spiritual force in the world. A religion which has no propaganda and accepts no proselytes, and has no Personal Saviour, has no hope to give to our poor fallen humanity, and however high its founder may soar in his ethical system, only mocks us in our distress and the sooner it perishes off the face of the earth the better.

He was afraid he must differ from the Professor in one point. He tells us "that we can hardly understand how immortality should have been unthought of till the Old Testament canon was nearly closed." It would be strange were it true. For his own part he did not understand how any religion could exist without the three essential fundamentals—a Supreme Being or superior beings of some sort, immortality, and a future judgment. Every other intelligent nation of antiquity had its doctrine of immortality and it would be incredible if Israel, the most spiritually enlightened of them all, did not possess it. But what did the expression about being "gathered unto their fathers mean"? It could not mean buried in the same grave. Again, in Isaiah liii, the Messiah sees of the "travail of His soul" after He has been dead and buried. And when our Lord encountered the Sadducees, He found the doctrine of immortality in the Old Testament and said, "Ye do err not knowing the Scriptures nor the power of God."

Mr. JOSEPH GRAHAM wished to take the subject in another direction. He thought it was not fair to the paper to treat it as if it were balancing Zoroastrianism against Christianity. Christianity was complete, and as Christian men we knew all about it. But from the beginning of the world, God, Who is no respecter of persons, but accepts those in every nation that fear Him and work righteousness, has revealed Himself to such as were able to bear it. Christ is the Light that lighteth every man that cometh into the world, and where we find evidences of such light outside Christianity, and Judaism, we might well acknowledge it with thankfulness and give to Christ alone the glory.

Miss ANNIE IRWIN had listened to the paper with deep interest. She had herself lived in India and worked among the Parsees, and thought she could give two reason for the decay of Parseeism. The

first was that their prayers and religious books were in a dead language, so that the ordinary people could not follow and understand them. The second cause was that the Parsees had adopted many Hindu customs, though they differed from the Hindus in their beliefs, yet, perhaps for political reasons, they had adopted certain Hindu practices.

A MEMBER said that there was one lesson that we might learn from the afternoon's paper, namely that we ought not to build fresh temples for religious systems that had proved themselves to be failures. These systems might indeed be first steps to a knowledge of God, but we had received a higher revelation and he thought it was waste of time to discuss them.

Mr. J. O. CORRIE said that Zoroastrianism lacked one thing. The absence of sacrifice indicated a deficiency in the sense of sin. This accorded with Ahura Mazda being the All-Wise, rather than the All-Holy.

The CHAIRMAN regretted that Professor Moulton had not been able to remain till the close of the Meeting: he was obliged to return to Manchester that evening, and had had to leave to catch his train. All would have wished to hear his answer to the discussion.

With reference to the doctrine of Immortality, that was certainly believed in by the Jews and other nations at an early date. The Babylonians and Assyrians held, some two thousand years before Christ, that there was a life after this present existence. It was not certain what they considered to be the means for attaining thereto, but the principal thing seemed to be faithfulness to the god whom a man worshipped.

We were far from knowing all the details of the Babylonian theory of immortality, but he who acquired it had the unspeakable joy of the Deity's unending companionship in the world beyond the sky. Apparently, also, that faithful servant of his god had to be buried in due form, and his grave had to be cared for.

Whilst always recognizing, as we all did, the immeasurable superiority and perfection of the Christian religion, we ought not to indulge that feeling of contempt for past religious systems which we find exemplified (for example) among the Mohammedans. It has been recorded that they called the antiquities which they dug up for us in Babylonia and Assyria "rubbish of old unbelievers,"

forgetting that they owed their existence to those "unbelievers," who were, in fact, their forefathers. Let us, then, have tolerance for the beliefs of those ancient peoples who, not having our advantages, developed faiths in many respects admirable, and let us remember the good they did in their generation.

The Meeting passed a unanimous and hearty vote of thanks to Professor Moulton, and adjourned at 6.15 p.m.

LECTURER'S REPLY.

I need comment but briefly on the discussion, most of which I have had the disadvantage of only reading in print. I should explain that I could not acknowledge as a "doctrine of immortality" the belief in a Sheol where men had "no remembrance" of God. I fully accept the view which Old Testament scholars seem generally to advocate now; and in the book referred to on p. 247 (footnote) I have tried to show how the incomparable loftiness of Israel's ultimate conception of the Future Life was the consequence of its late arrival along the road of a fruitful but sorrowful experience.

The date of Zarathushtra is a problem on which I naturally do not expect my *ipse dixit* to suffice. But Professor Orchard will find in my Hibbert Lectures a very full discussion. The necessary brevity of my delineation is no doubt responsible for the curious infelicity by which one member accused Zoroastrianism of a deficient sense of sin. Deficiency of course there is if the Gospel is the standard. "Holiest" happens to be the commonest epithet of Mazdah, if the usual translation is right.

I might say that I add this postscript after receiving a call to go to Bombay for a year and study the Parsees at close quarters. When I return I shall be better able to appraise the contributions of speakers who have been in India.

569TH ORDINARY GENERAL MEETING,

HELD IN COMMITTEE ROOM B, THE CENTRAL HALL,
WESTMINSTER, ON MONDAY, MAY 3RD, 1915, AT 4.30 P.M.

COL. M. A. ALVES TOOK THE CHAIR.

The Minutes of the preceding Meeting were read and confirmed.

The CHAIRMAN invited the Rev. Dr. St. Clair Tisdall, who had favoured the Institute with important papers upon two former occasions, to deliver his address on "Mahâyâna Buddhism and Christianity."

MAHÂYÂNA BUDDHISM AND CHRISTIANITY.

By the REV. W. ST. CLAIR TISDALL, D.D.

MAHÂYÂNA Buddhism has recently been asserted to resemble Christianity very closely. A writer who has spent many years in China, in close contact with those who profess the former faith, speaks of "the extensive common* ground in Buddhism and Christianity," tells us that there is a "vital connexion between Christianity and Buddhism," styles the Mahâyâna school "New Testament Buddhism," finds "a complete identification of the attributes of the Christian Trinity in the New Buddhism," and even ventures to assert that "its theology is Christian in everything almost but its nomenclature." He adds a statement with which, *if it be the truth*, we must reckon in all missionary work in the Far East, and which we now proceed to examine. "If it be, as it is more and more believed, that the Mahâyâna Faith is not Buddhism, properly so called, but an Asiatic form of the same Gospel of

* *The New Testament of Higher Buddhism*, by Timothy Richard, D.D., Litt.D., pp. 2, 9, 15, 27 and 39.

our Lord and Saviour Jesus Christ, in Buddhistic nomenclature, differing from the Old Buddhism just as the New Testament differs from the Old, then it commands a world-wide interest, for in it we find an adaptation of Christianity to ancient thought in Asia, and the deepest bond of union between the different races of the East and the West, namely, the bond of a common religion." This writer proceeds to say,* "Buddhism and Christianity at first contact in modern days were mutually hostile to one another. But when the earnest students of both religions penetrated through the different forms and nomenclature into the deep internal meaning of all, they found not only that they aimed at the same thing, the salvation of the world, but that many of their chief teachings were common to both. They no longer feared each other as foes, but helped each other as friends."

If we take all this, or even a small part of it, as true, we must then proceed to enquire how such a stupendous fact is to be accounted for. This our author attempts to explain by advocating something very similar to the German writer Jeremias' theory of the supposed† Babylonian origin of religions. This theory is so completely contrary to well-known historical facts that we need not stay to examine it. Nor is it necessary to do so. Before enquiring how to account for the asserted close resemblance between these two religions, we must first examine Mahâyânism, in order to see for ourselves whether such a resemblance really exists or not. This we now proceed to do.

At the outset of our investigation we must very briefly enquire what history tells us about the origin of this particular form of Buddhism, at what time and under what circumstances it was introduced into China, and in what relation it stands to the teaching‡ of the earlier system still prevalent in Ceylon, Burma, and Siam.

Siddhârtha (also called Gautama, Śâkyamuni, and "the Buddha" *par excellence*) died about 477–478 B.C., at the age of eighty years. Under King Aśoka, who reigned from 257 to 220 B.C., the system of philosophy which he taught became the

* *Op. cit.*, pp. 48, 49.

† *The Old Testament in the Light of the Ancient East*, vol. i, cap. i. See my *Christianity and other Faiths*, pp. 220, 221.

‡ The religious books of Northern Indian Mahâyânism are the following nine : *Prajñâpâramitâ*, *Gaṇḍavyûha*, *Daśa-bhâmiśvara*, *Samâdhi-râja*, *Lankâvatâra*, *Suddharma-puṇḍarîka*, *Tathâgata-guhyaka*, *Lalita-vistara*, *Suvarṇa-prabhâsa*.

established religion of almost the whole of India. It divided, in process of time, into a considerable number of sects, but the only ones which we need notice at present are those known as the Hīnāyāna, or "Little Vehicle," and the Mahāyāna, or "Great Vehicle," respectively. Of these the former represents more nearly the original teaching of Buddha; the latter, *based on the same great principles*, has gradually come to incorporate into itself doctrines borrowed from the religions and philosophies of the various countries into which it has spread. But the important modifications thus introduced have not to any great extent been permitted, at least in theory, to alter its main dogmas. In the Mahāyāna system we find certain words used in a sense different from that in which they occur in earlier books, and some terms are now employed in a technical significance which does not necessarily correspond with their etymological* meaning. But such things are characteristic of all philosophical systems. Popular Mahāyānism in China differs not a little from that prevalent in Tibet, which is generally known as Lamaism, and which, therefore, we do not deal with here. The Buddhism of Japan, being in large measure derived from Corea and China, resembles the Chinese form of the system much more closely. Both here and in China we find Hīnāyāna and Mahāyāna ideas intermingled, so that Chinese Buddhism is in reality most essentially and unmistakably *Buddhism*, in spite of the fact that it has admitted many modifications in its corrupt popular forms. Yet all of these admixtures, taken together, do not in any way render it at all worthy of being described as in any degree "a form of Christianity," as we now proceed to show.

One of the latest exponents of Mahāyāna Buddhism is Suzuki, himself a learned Japanese Buddhist, well acquainted with English, and able to expound his beliefs in our own tongue. In his *Outlines of Mahāyāna Buddhism* he is, no doubt (like many Muslims and Hindûs of Western education), inclined to try to identify the doctrines of his own faith with certain forms of modern philosophical and scientific speculation. For this we must make due allowance. But on the whole he gives a correct

* *E.g.*, *Dharmakāya* (from *dharma*, law, enactment, religion, and *kāya*, a body, means in early Indian Mahāyāna works (1) the "law-body," one of the three bodies of each Buddha; (2) or "having the law as a body" (= a Buddha); (3) or it is one of Avalokiteśvara's names; (4) or it is the name of a god of the *Bodhi* tree (Monier Williams). In modern Mahāyānism its sense is different, as we shall see.

account of Mahâyâna teaching, as far as its main tenets are concerned, apart from the beliefs and practices which the popular forms of the religion have assimilated from Taoism and other Chinese beliefs. His version of Aśvaghosha's *Awakening of Faith* enables us to test his statements. Further indisputable information is afforded by Beal's and other translations of Buddhist works, translated from Sanskrit into Chinese many centuries ago. We refer to these rather than to the original Sanskrit works themselves, because our business is not now to trace the gradual development of early Buddhism in India into the extinct *Indian* form of Mahâyânism, but rather to learn what *Chinese* Mahâyânism really *is*, and whether there is any justification for the statement that it is almost identical with Christianity except in the terms which it employs.

Were this so, we should have good cause to rejoice; but for that very reason it is the more needful to be on our guard against making a mistake about the matter. We therefore in the first place turn to what Suzuki tells us as to the leading doctrines of Mahâyâna Buddhism.

According to him, the nearest approach in the religion to a belief in God is the theory of the existence of the Dharmakâya. "Buddhism does not use the word *God* . . . Buddhism outspokenly acknowledges the presence in the world of a reality which transcends the limits of phenomenality, but which is nevertheless immanent everywhere, and manifests itself in its full glory. God or the religious object of Buddhism is generally called Dharmakâya-Buddha and occasionally Vairocana-Buddha or Vairocana-Dharmakâya-Buddha; still another name for it is Amitâbha-Buddha or Amitâyur-Buddha, the two latter being mostly used by the followers of the Sukhâvati sect of Japan and China. Again, very frequently we find Śākyamuni, the Buddha and the Tathâgata, stripped of his historical personality and identified with the highest truth and reality . . . Dharmakâya means the organized totality of things, or the principle of cosmic unity, though not as a purely philosophical concept, but as an object of the religious consciousness."* He proceeds to quote the following passage from the *Avatamsaka Sûtra*,† which gives a comprehensive statement about the nature of the Dharmakâya in these words: ‡ "The Dharmakâya, though manifesting itself in the triple world, is free from impurities and desires. It

* *Outlines of Mahâyâna Buddhism*, pp. 219, 220.

† Chinese version.

‡ *Outlines of Mahâyâna Buddhism*, pp. 223, 224.

unfolds itself here, there, and everywhere, responding to the call of *Karma*. It is not an individual reality, it is not a false existence, but is universal and pure. It comes from nowhere, it goes to nowhere; it does not assert itself, nor is it subject to annihilation. It is for ever serene and eternal. It is the One, devoid of all determinations. This Body of Dharma has no boundary, no quarters, but is embodied in all bodies. Its freedom or spontaneity is incomprehensible, its spiritual presence in things corporeal is incomprehensible. All forms of corporeality are involved therein, it is able to create all things. Assuming any concrete material body as required by the nature and condition of *Karma*, it illuminates all creations. Though it is the treasure of intelligence, it is void of particularity. There is no place in the universe where this Body does not prevail. The universe becomes, but this Body for ever remains. It is free from all opposites and contraries, yet it is working in all things to lead them to Nirvāṇa."

This extract and the general teaching of the Sūtra on this subject represent Mahāyāna Buddhism in an early and comparatively pure form, that is to say, before the Dharmakāya had been personified and in part identified with Siddhārtha Buddha. Suzuki's own explanations of the term show this identification in a great degree complete. Hence he speaks of "The Dharmakāya or the Body of the Tathāgata, or the Body of Intelligence,"* and says that it "is† not a mere philosophical abstraction, standing aloof from this world of birth and death, of joy and sorrow, calmly contemplating the folly of mankind: but—it is a spiritual existence which is 'absolutely one, is real and true, and forms the *raison d'être* of all beings—is free from desires and struggles, and stands outside the pale of our finite understanding.'" Elsewhere he says: "The‡ Dharmakāya, which literally means *body or system of being*, is, according to the Mahāyānists, the ultimate reality that underlies all particular phenomena; it is that which makes the existence of individuals possible; it is the *raison d'être* of the universe; it is the norm of being, which regulates the course of events and thoughts. . . . The Dharmakāya may be compared in one sense to the God of Christianity, and in another sense to the *Brahman* or *Paramātman* of Vedāntism. It is different, however, from the former in that it does not stand transcendently above the

* *Op. cit.*, p. 231 (from the *Avatamsaka-Sūtra*).

† p. 231.

‡ pp. 45, 46.

universe, which, according to the Christian view, was created by God, but which is, according to Mahâyânism, a manifestation of the Dharmakâya himself. It is also different from *Brahman* in that it is not absolutely impersonal, nor is it a mere being. The Dharmakâya, on the contrary, is capable of willing and reflecting: to use Buddhist phraseology, it is *Karunâ* (love)* and *Bodhi* (intelligence), and not the mere state of being. This pantheistic and at the same time entheistic Dharmakâya is working in every sentient being, for sentient beings are nothing but a self-manifestation of the Dharmakâya." In much the same way, in the translation of *The Awakening of Faith*, he writes: "Dharmakâya signifies that which constitutes the ultimate foundation of existence, one great whole in which all forms of individuation are obliterated—in a word, the Absolute. This objective absolute being . . . has been idealized by Mahâyânists, so that that which knows is now identical with that which is known, because they say that the essence of existence is nothing but intelligence pure, perfect, and free from all possible worries and evils." And Aśvaghosha (if he† be the author of *The Awakening of Faith*) says: "The Dharmakâya can manifest itself in various corporeal forms just because it is the real essence of them. Matter (*rûpa*) and mind (*çitta*) from the very beginning are not a duality. So we speak of the universe as a system of rationality (*prajñakâya*), seeing that the real nature of matter just constitutes the norm of mind. Again we speak of the universe as a system of materiality (*dharmakâya*), seeing that the true nature of mind just constitutes the norm of matter."‡

From all this, which recalls to our minds many of the vain theories and dogmas of a large number of philosophies both Eastern and Western, ancient and modern, we clearly gather that Mahâyânism in its genuine form recognizes no God in any sense worthy of the term. Its Dharmakâya is an abstraction, and denotes the reality or *substance* which is conceived as underlying all that exists. It is impersonal, though there seems (from what we observe in Nature) to be somehow incorporated in it a blind pity (for *Karunâ* means *pity*, and not *love*), and through it there runs not a purpose, but some vague manifestation of intelligence. Most Mahâyânists deny to it Will, though

* The word does *not* mean *love*, but *pity*.

† Most scholars believe that he is *not* the Aśvaghosha of the first century of our era.

‡ *Awakening of Faith*, Suzuki's version, p. 103.

Suzuki thinks that quality too may be found in it somehow. Prayer cannot profitably be addressed to it, for it is devoid of personality and consciousness. It manifests itself in all that exists, for existent things are its outward garb, so to speak. But it is untouched by our troubles, and renders no help to men in attaining knowledge of itself, in overcoming temptation, in securing happiness hereafter. Great men, such as the historical Siddhārtha Buddha, are manifestations, or incarnations, of it; but so are all other men and all animals, plants, minerals, in fact all things that exist. We may in a sense style this Pantheism, or we may call it Atheism, or Monism, or we may apply to the Mahāyāna system a variety of other names, all more or less appropriate; but the one thing that we *cannot* do, if in any degree we understand the system, is to assert that it is in any sense a form of Christianity.

Mahāyānism is genuinely Buddhistic in this, that it utterly denies the existence of Personality, not only in the Dharmakāya, but also in man. "What* distinguishes Buddhism most characteristically and emphatically from all other religions is the doctrine of non-Ātman, or non-ego, exactly opposite to the postulate of a soul-substance which is cherished by most of religious enthusiasts. In this sense Buddhism is undoubtedly a religion without the soul." "Buddhists do not deny the existence of the so-called empirical ego in contradistinction to the noumenal ego, which latter can be considered to correspond to the Buddhist ātman. Vasubandhu, in his treatise on Yogācāra's idealistic philosophy, declares that the existence of *ātman* and *dharma* is only hypothetical, provisional, apparent, and not in any sense real and ultimate. To express this in modern terms: the soul and the world, or subject and object, have only relative existence, and no absolute reality can be ascribed to them. Psychologically speaking, every one of us has an ego or soul which means the unity of consciousness. . . . Buddhism most emphatically insists on . . . the non-existence of a concrete, individual, irreducible soul-substance, whose immortality is so much coveted by most unenlightened people. Individuation is only relative and not absolute. . . . To think that there is a mysterious something behind the empirical ego, and that this something comes out triumphantly after the fashion of the immortal phoenix from the funeral pyre of corporeality, is not† Buddhistic." Here again Mahāyānism is absolutely opposed to Christianity.

* *Outlines*, p. 32.

† *Outlines*, pp. 163, 164.

It is a very remarkable thing that Buddha, who taught a philosophy in which there was no room for a God, should ultimately after his death himself have been deified. The reason, doubtless, is that man needs a deity of some kind, and that this need asserted itself, not only in the case of the great mass of his followers, as their numbers grew, and as Aśoka "caused those who had been deemed gods in India to be held to be no gods," but also in that of the more philosophically inclined among them. Hence it gradually came to be held that "The Buddha* never entered into Parinirvâṇa; the good dharma will never perish. He showed† an earthly death merely for the benefits of sentient beings." This dogma is not found in the books of the Hīnâyâṇa school. It shows the first step in the deification of the Tathâgata. The word originally meant "He who came as (others before him),"‡ and even in Chinese translations of Sanskrit works is used as a title of many, if not all, the other Buddhas as well as Siddhârtha. But in many Mahâyânist books it is employed as equivalent to Dharmakâya, the nearest approach in that system to the idea of Deity. Hence the idealized Buddha came to be regarded as a personal aspect or manifestation of the philosophical concept known as Dharmakâya. In this way he was supposed to have a "Triple body," the three being called respectively the body of Transformation (Nirmâṇa-kâya), the body of Bliss (Sambhoga-kâya), and the body of Dharma (Dharmakâya). In the first of these he has the power of assuming whatever bodily forms he pleases, the second is a corporeal existence in which he at the same time fills the universe and enjoys great happiness, in the third he is simply identical with the Dharmakâya. It is in the second form that the members of the Sukhâvatī sect, to which most Chinese Buddhists belong, now conceive of Buddha as reigning in "The pure Land" in the Western Paradise, a region of bliss, where the pious hope to find Amitâbha (or Amida) Buddha, surrounded by a vast number of other Buddhas and Bodhisattvas, and to enjoy an existence of unalloyed, if somewhat material, bliss. It is strange that some writers have ventured

* *Op. cit.*, p. 254.

† *Cf.*, the doctrine of the Docetic heresy in early Christian days.

‡ See below for fuller consideration of its import. The explanation given in the *Vajracchedikā* does not make the matter very clear. The name Tathâgata is there said to "express true Suchness, the absence of origin, the destruction of all qualities," and to be suitable because "no origin is the highest goal" (*Sacred Books of the East*, vol. xvii).

to compare this *Trikāya* doctrine with the Christian doctrine of the Trinity.

Others, however, prefer to compare the three main objects of Buddhist worship in China with the three "Persons" in one God in whom we Christians believe. Thus Dr. Timothy Richard speaks of "The Amitābha Trinity" as consisting of

"Amitābha in the centre,
Ta Shih Chih on his right hand,
Kwanyin or his left,"

and he compiles from "The Amitābha Scripture" the following account of the Chinese Ta Shih Chih, called Dai Seishi in Japanese, though no doubt using Christian terms much too freely, as is this writer's wont.

"God has two supreme heavenly beings as counsellors. The name of one is Kwanyin, and the name of the other is Ta Shih Chih (the Great Mighty One), who always sit on each side of Him. God took counsel with them about past, present and future affairs of the universe, and desired that they should separate from Him and go and become incarnate in one of the worlds and help Him to save it, without losing their original unity and state. . . . The *Scripture of Boundless Age* says of Ta Shih Chih that he can put an end to the *Karma*-chain of endless births and deaths caused by sin by removing sin altogether, without needing a single re-birth, but go straight to the Pure Land of Paradise, and live for ever there (Meditation 12)." Of the other member of this Triad, the goddess Kwanyin, Dr. Richard writes: "This Inspirer of their highest and holiest thoughts they call Kwanyin in China and Kwannon in Japan, which means the one who looks down upon human suffering and is the inspirer of men and women to save their fellows. Sometimes this Inspirer is represented by a male, Mañjuśrī, and sometimes by a female, the goddess of Mercy."*

Here again our author allows his imagination to guide him into statements which are likely to lead his readers very much astray, though he incidentally shows that Mahāyānism in China has assimilated a great deal of Chinese polytheism and idolatry. Ta Shih Chih and Kwanyin are genuine Chinese Deities, though the latter has been identified with the Northern Buddhist Avalokiteśvara. Avalokiteśvara and Mañjuśrī were Bodhisattvas worshipped by the Mahāyānists in India as early as the time of the Chinese Pilgrim Hiuen Tsiang, in the seventh century

* *New Testament of Higher Buddhism*, pp. 13-15.

of our era. The former has been identified with the Hindû god Śiva, and also with the Sun. His name is by the Tibetans translated "the Lord who looks," but it may more grammatically denote "the Lord who is seen, the visible Lord." Another rendering is "Lord of compassionate glances." It is of this rather loose rendering that Dr. Richard gives a very unduly expanded paraphrase in the passage we have just quoted. A modern Nipâlêse inscription speaks of him as equivalent to Śakti, that is to say to the Hindû personification of the feminine procreative energy, a fact which shows that "The Chinese transformation of Avalokita into a woman had probably been already effected in India."* To identify a deity of this kind with the Holy Spirit hardly seems either accurate or reverent. Avalokiteśvara is apparently intended to represent the Buddha of the present, while Maitreya is that of the future, and hence Amitâbha that of the past. Thus this and other *mirages* of a Tri-une God in Buddhist Sculptures vanish on nearer approach. In the "Lotus of the True Law," Avalokiteśvara is superior to all other Bodhisattvas except Mañjuśrî, who appears to hold a rank equal to his. "His real dwelling-place is in the Sukhâkara,† the Paradise of Amitâbha, where he sits sometimes on the right and sometimes on the left‡ of Buddha." In this it is evident that a great deal of the Mahâyâna form of Buddhism in China is really imported from India, though its deities have often been assimilated with native gods and goddesses.

Amitâbha "was§ in ancient times a Bhikshu called Dharmâkara. . . . Dharmâkara . . . vowed that, when he reached Buddhahood, he would have a 'Buddha-field' wondrously blessed, the Happy Land (*Sukhâvatî*); and that is why there flock to him from all the 'Buddha-fields' the beings appointed to *Nirvâṇa*, either as future *Arhats* or as Buddhas. It is with Amitâbha that those who are guilty, but possess the promise and potency of deliverance, spent their period of probation in lotus-flowers; with him also the Bodhisattvas become prepared for their last birth, by having good opportunities of going to visit, to honour, and to listen to the Buddhas of all the worlds. . . . The Bodhisattvas are not equal among themselves. In the heaven of Amitâbha there are two, Avalokita and Mahâsthâmaprâpta, almost as great and luminous as Buddha, who sit on thrones

* L. de la Vallée Poussin in *Encyclopædia of Religion and Ethics*, vol. i, p. 260.

† Otherwise called *Sukhâvatî*.

‡ Poussin, *ut supra*.

§ *Ibid*.

equal to his. Avalokita is the more majestic ; this is due to his vow to bring all beings, without exception, into the 'Happy Land' . . . He never forgets for a moment his rôle as provider of the Sukhâvatî. And it is he, rather than Amitâbha himself, who is the lord of the Sukhâvatî."

Mention of Sukhâvatî, often styled the "Western Paradise," is to be found in the last pages of *The Awakening of Faith*, where, however, a reference is made to an unnamed Sûtra, possibly the larger or the smaller *Sukhâvatî-vyûha* or the *Amitâyur-dhyâna*. *The Awakening of Faith* teaches also that the way of access to that Paradise is an easy one. "It is said in the Sûtra* that if devoted men and women would be filled with concentration of thought, think of Amitâbha Buddha in the world of highest happiness (*Sukhâvatî*) in the Western region, and direct all the root of their good work toward being born there, they would assuredly be born there." The *Saddharma Puṇḍarîka* (a Sanskrit work which Kern says existed in or about A.D. 250, but contains teaching that goes back for perhaps a couple of centuries) is the chief authority for the descriptions of Sukhâvatî now consulted in Japan as well as in China. It contains long accounts of its somewhat sensual happiness. In China it is taught that there Amitâbha welcomes those who on earth invoke his name, and that by so doing they may escape all the numerous Buddhist hells and obtain eternal happiness. The Chinese goddess Kwanyin, who is associated with him, is one of the most popular deities in modern China among Buddhists. Chinese legend connects her with a heroine who once lived in the sacred island P'u-t'o, near the mouth of the Yang-tse-Kiang. She is worshipped as the "Star of the Sea."

It should be observed that, though early Buddhism denounced all idol-worship, yet Mahâyâna Buddhism, which has admitted all kinds of gods from the Chinese and other religions, especially Hindûism, has adopted idolatry to the very fullest extent.

Some are inclined to think that Nestorian Christianity in Northern China produced considerable effect upon Mahâyânism, and in particular that some of the features of Amitâbha owe their origin to this source. If so, as Archdeacon A. E. Moule says,† these Christian elements, with the exception of belief in the efficacy of invoking Amitâbha, have almost altogether faded away. There is no need to derive the "Western Paradise" from

* *Awakening of Faith*, Suzuki's version, pp. 145, 146.

† *The Chinese People*, p. 184.

Christianity, for we have seen its Indian origin, at least in part. Paradise was situated in the West in early Egyptian, Greek, Keltic, and many other myths, and may well have been so in Chinese also. As to the general question whether Mahâyânism has borrowed anything from any form of Christianity, it would be difficult, in this as in every other case, to prove a universal negative. Opinions will always differ on certain features of the religion, and, remembering how ready Mahâyânism showed itself to accept a whole host of religious ideas from the religions of China and Japan, there seems no reason whatever *a priori* to doubt that it would adopt the same attitude towards Nestorianism. But with regard to the *kinship* which some have sought to establish (in defiance of all history) between the two faiths, I am inclined to think that a much more reasonable view is that expressed by Professor De Groot, who tells us that Taoism, Confucianism, and Buddhism "are* three branches, growing from a common stem, which has existed from prehistoric times. This stem is the Religion of the Universe, its parts and phenomena. This Universism . . . is the *one* religion of China. As these three religions are its three integrant parts, every Chinese can feel himself equally at home in each, without being offended or shocked by conflicting and mutually exclusive dogmatic principles. In the age of Han, two centuries before and two after the birth of Christ, the ancient stem divided itself into two branches, Taoism and Confucianism, while simultaneously Buddhism was grafted upon it.

"Indeed Buddhism at that time found its way into China in a Universistic form, called Mahâyâna, and would therefore live and thrive upon the ancient stem. In this way the three religions appear before us as three branches of one trunk; as three religions, yet one." Buddhism "found its way into the Empire of China during the reign of the House of Han, and perhaps even before that time. It was more particularly the Mahâyâna form of Buddhism that entered China, *i.e.*, 'the great or broad way' to salvation, which claimed to lead all beings whatever, even animals and devils, through several stages of perfection unto the very highest stage of holiness, that of the Buddhas or gods of Universal Light, equivalent to absorption in universal Nothingness (*Nirvâna*). This 'Broad Way' could be trodden by following a religious discipline, consisting principally of asceticism and self-mortification. Accordingly it bore a striking resemblance to the *Tao of Man*, which . . . by

* *Religion in China.*

annihilating the passions, led to *wu wei*, or to that nothingness of action which the Universe itself displays. The two systems perfectly coalesced, they met harmoniously. Buddhism might consider its road into China to have been paved by Taoism. It adopted the word *Tao*, which means 'Way,' to denote its own Way to salvation; and on the other hand, Taoism held that Buddhism was preached in India by Lao-tsze himself, who journeyed for this purpose to the West, and never returned. The fusion was greatly furthered by the universalistic and syncretic spirit of the Mahâyâna, which, while imperatively insisting on effort for the salvation of *all* beings, and the increase of means leading to that great end, allotted, with almost perfect tolerance, a place in its system to the Tao of the Taoists."

We see, therefore, that Mahâyânism, instead of being in any way identical with any form of Christianity, has a very close relationship with Chinese Taoism. Neither system has any real place for a personal God. Both are purely human in origin, and both endeavour to show that men can, by their own unaided efforts, find a way of escape, not from sin, but from any real or imagined existence apart from the chain of causation. Between the Mahâyâna and the Christian meaning of Salvation there is as great a difference as between the Dharma-kâya and the God in whom we believe and whom we know through Christ.

Mahâyânism accepts, at least in theory, the distinguishing Buddhist doctrine of *Karma**, about which therefore it is not necessary to say much in this paper†, the subject having often been dealt with by able writers. Metempsychosis or Transmigration of souls, though it is doubtless inconsistent with the teaching that man has no true Ego or soul, is believed in by Mahâyânists generally as fully as by members of the Hinâyâna school. In fact this doctrine, originally belonging to Hindûism, has immense influence in China and Japan to day, as well as in Ceylon. The form which the doctrine has now assumed in popular belief in China is that the lower animals have true but elementary souls, and that these may, if favourably situated for so doing, rise higher in the scale and be born into the world as men. In accordance with this idea, in not a few Buddhist monasteries in China the monks undertake to give certain

* With this and other leading tenets of original Buddhism I have dealt at length in *The Noble Eightfold Path*, Elliott Stock (C.M.S. House).

† I may be permitted to refer to my *The Noble Eightfold Path*, pp. 75, 87, etc.

selected animals a careful training that will enable them to be born as human beings* in the next life. It is remarkable, however, if we may credit those who speak from many years' personal acquaintance with Chinese Buddhism, that such tender care for the religious interests of the lower animals does not prevent these monks from showing callousness and indifference towards the sufferings of their own countrymen. It is much the same with Mahâyânism in Japan. A writer who has spent many years in the country says "Because of his faith in the doctrine of the Transmigration of souls, the toiling labourer will keep his wheels or his feet from harming the cat or dog or chicken in the road, even though it be at risk and trouble and with added labour to himself. The pious will buy the live birds or eels from the old woman who sits on the bridge, in order to give them life and liberty again in air or water . . . Yet, while all this care is lavished on animals, the human being suffers. Buddhism is kind to the brute and cruel to man†." In Ceylon, too, where the Hinâyâna school of Buddhism is dominant, the belief in Metempsychosis has notoriously had the effect of rendering human life hardly more sacred in the people's eyes than the life of an animal. Hence the number of murders which occur there is greater in proportion to the population than in any other place known to us.

Much importance has recently been attached to what Mahâyânism teaches about Buddha under the title of *Tathâgata*, or in Chinese *Ju Lai*. The term has had the wildest and most fanciful meanings attached to it recently by the author of that astounding work of an ill-balanced judgment and untrammelled imagination, *The New Testament of Higher Buddhism*. This writer in different parts of his book renders the term, now by *Messiah*, *The Model Come*, *The True Model become Incarnate*, now by *Manifested Model*, *Incarnate Model*, and again by the titles "God Incarnate," "Incarnate Lord." It is difficult to find language severe enough to condemn such a pretended translation of the term. It means nothing even remotely similar to what these words express to a Christian. The Chinese *Ju Lai* is merely a translation of the original Sanskrit word *Tathâgata*. Now *Tathâgata* means literally "He who has come thus"‡

* See a prayer for this in De Groot's *Le Code du Mahâyâne en Chine*, p. 125 ; see also *op. cit.*, p. 53.

† Dr. Griffis, *The Religions of Japan*, pp. 315, 316.

‡ Cf., the similarly formed word *Yathâgata* in *Lalita-vistara*, p. 162, where it means "(the girls) just as they came."

(Ὁ οὕτως προσεληλυθώς), i.e., who has come just as did the Buddhas that preceded him. Hence the same term is applied, not only in Sanskrit but also in Chinese Buddhist works to the Buddhas* in general. This fact is of itself sufficient to show that, even if the term *had* any deep meaning, it would denote something not peculiar to Siddhârtha Buddha but common to all the other real or imaginary Buddhas also. Hence to avoid its true meaning and deliberately to introduce in its stead technical terms of Christian theology, in order to lend support to the theory that Mahâyâna Buddhism is only Christianity under another name, is, to say the least of it, misleading. It is true also that, as Buddhism proper admits the existence of no God, the idealised and deified Buddha has, in part, usurped the place of the Deity (we say only in part, because popular Mahâyâna Buddhism is polytheistic, not monotheistic); yet this does not justify our author in boldly translating the word "Buddha" by "God" in his so-called "Translation" of *The Awakening of Faith*. The same exception must be taken to his rendering "Dharmakâya" by "The Divine Spirit," since we have already seen that the Dharmakâya is impersonal. In fact it is not too much to say that each and every one of Dr. Richard's statements about the close resemblance between Mahâyâna Buddhism and Christianity rests upon imagination and a singular unscrupulousness of statement, which renders him entirely unreliable as an authority.

We must now endeavour to explain as briefly as possible a few of the more important technical terms used by the Mahâyânists in stating some of the philosophical dogmas of their faith. One of these is *Bhûtatâtathâtâ*, which Suzuki translates "Suchness," and which he states to be one of the conceptions most distinctive of the Mahâyâna school. "Suchness" is also known as *Tathâgata-garbha* (*The Womb of the Tathâgata*) and *Âlaya-vijnâna* (*World consciousness*). The word literally means "the true nature of reality," and in *The[†] Awakening of Faith* it is thus explained: "Thus we understood that *Suchness* is neither that which is existence nor that which is non-existence, nor that which is at once existence and non-existence, nor that which is not at once existence and non-existence; that it is neither that which is unity nor that which is plurality, nor that which is at once unity and plurality, nor that which is not at once unity and plurality. In a word, as *Suchness* cannot be com-

* See Beal's *Romantic History*, pp. 7 and 8, where Buddha gives the title to all the Buddhas who had preceded himself. See also p. 378, etc.

† *Awakening of Faith*, Suzuki's version, pp. 59, 60.

prehended by the particularizing consciousness of all beings, we call it the Negation (or Nothingness, *Śūnyatā*)." But, as this definition cannot be said to be exactly perspicuous, it may be well to add Suzuki's explanation. "Suchness,"* he says, "the ultimate principle of existence, is known by so many different names, as it is viewed in so many different phases of its manifestation. Suchness is the Essence of Buddhas, as it constitutes the reason of Buddhahood; it is the Dharma when it is considered the norm of existence; it is the Bodhi when it is the source of intelligence; Nirvāṇa when it brings eternal peace to a heart troubled with egoism and its vile passions; Prajñā (wisdom) when it intelligently directs the course of nature; the Dharmakāya when it is religiously considered as the fountain-head of love and wisdom; the Bodhiçitta (intelligence-heart) when it is the awakener of religious consciousness; Śūnyatā (vacuity) when viewed as transcending all particular forms; the *summum bonum* (*kuṣalam*) when its ethical phase is emphasized; the Highest Truth (*paramārtha*) when its epistemological feature is put forward; the Middle Path (*madhyamārga*) when it is considered above the onesidedness and limitation of individual existence; the Essence of Being (*bhūtakoti*) when its ontological aspect is taken into account; the *Tathāgata-garbha* (the womb of Tathāgata) when it is thought of in analogy to mother earth, where all the germs of life are stored, and where all precious stones and metals are concealed under the cover of filth." All this may perhaps be summed up by rendering the word "Actuality" or "Nature."

In order to show the practical agreement between this doctrine of Suchness and the great fundamental principle of Taoism it is not necessary to do more than to quote an authoritative Chinese definition of what *Tao* itself is. In the *Tao-teh-king* (cap. xxv.) we read:†

"There was a something, undifferentiated and yet perfect, before heaven and earth came into being. So still, so incorporeal! It alone abides and changes not. It pervades all, but is not endangered. It may be regarded as the mother of all things. I know not its name: if I must designate it, I call it *Tao*. Striving to give it a name, I call it great; great, I call it transcending; transcending, I call it far off; far off, I call it returning . . . Man takes his norm from earth; earth from heaven: heaven from Tao; the Tao from itself."

* *Outlines of Mahāyāna Buddhism*, pp. 125, 126.

† Quoted by Moore, *History of Religions*, vol. i, p. 50.

Or again :* "What is Tao?" exclaims Huai-nan Tzŭ (or Liu An, 122 B.C.) in his *History of Great Light* . . . "Tao is that which supports Heaven and Earth. Hidden and obscure, it reinforces all things out of formlessness. Penetrating and permeating everything, it never acts in vain. It fills all within the Four Points of the Compass. It contains the Yin and the Yang." As has been well said: "Now,† man's great object, the goal of his hope for the future, the secret of life worth living now, must be conformity to this Tao, this Nature, or Principle of Nature, this pathway of souls, and of all things, this Doctrine of the Way. How is conformity to be secured? 'By being always and completely passive'; 'Non-exertion'; 'Not doing'; 'Inertia,' with all its 'vices.' Spontaneity and the absence of design also must be attained. Passionless, as well as quiescent, man must banish all desires from his heart, and simply yield himself to his environment. 'He need not be a recluse to be quiescent. Holy men there were, who did not abide in forests. They did not conceal themselves, but they did not obtrude their virtues.' (Chuang-tzŭ.)" This philosophy of quiescence is so thoroughly in accordance with certain forms of Hindû philosophy that, had not Taoism existed in China long before any known contact with the West, we should have been almost convinced of its Indian origin. In the same way the Doctrine of the Tao coincides almost entirely with the Mahâyânistic theory of "Suchness," which, indeed, though alien to earlier Buddhism, is distinctly derived from Hindû philosophy. These things not only show how closely Taoism and Mahâyânism are related to one another, but also how it was that, when introduced into China, Mahâyâna Buddhism found a wide acceptance and was able to assimilate many Chinese beliefs and to admit Kwanyin and perhaps other Chinese deities into its Pantheon. A similar process on a larger scale took place in Japan. In early days the indigenous gods of China were worshipped without the use of either temples or images; and it is believed that both of these were introduced into the country by the Buddhists.

Worship in a Buddhist temple in China is thus described:‡ "Buddha—the historic Gautama—sits in the centre of his own temple, gilded over the whole surface of his image, and with a

* Moule, *The Chinese People*, pp. 256, 257.

† *Ibid.*, Archdeacon Moule is here speaking from the Taoist point of view.

‡ *Op. cit.*, p. 213.

lotus-flower as his throne. On his right is usually Ânanda, . . . and on his left Kaśyapa . . . Very frequently one of the Buddhist Triads is represented, such as the Buddha of the Past, of the Present, and of the Future; or, again, Amitâbha often forms the centre of a group of other *avatârs*.* Before this central shrine in the larger temples and monasteries, matins at 3.30 a.m. and evensong at 5 p.m. are sung antiphonally by a choir of priests, and here the chief prostrations and offerings are made, and fortunes are ascertained by drawing lots before the idol. Here through the mingled influences of the awe inspired by these gigantic, silent images of the Buddha, and of bribes of sweets and other gifts mysteriously placed by parents and grandparents in the little hands as from the god, idolatry is stamped, sometimes indelibly, on the minds of China's children. There is an ambulatory behind this central shrine, and here the image of Kwan-yin, the goddess of Mercy, is placed, and largely resorted to by the worshippers."

It is held by some students that wandering Buddhist monks from Northern India came into contact with China as early as the second† century before our era. Be this as it may, there seems to be truth in the tale that, in A.D. 61, the Emperor Ming-ti, having in a dream beheld a golden image hovering over his palace, sent envoys to the West in order to find out whether the dream meant that a great Teacher had appeared there, whose teachings it behoved him to know. Instead of going on until they met with a Christian Apostle or Evangelist, these envoys halted on reaching a Buddhist monastery in North India, where they accepted the Mahâyânistic doctrines, and, returning to China after six years' absence, brought with them some Buddhist monks, who began to teach their doctrines at court, and to translate some of their Sacred Books into Chinese. Under Royal patronage the new tenets spread rapidly,—the more so because they not only harmonised with Taoism, but also because the teaching they gave about a Western Paradise which all might easily enter after death formed a great attraction.

It is not known precisely what Buddhist Sûtras were the first translated into Chinese, but, speaking generally, as far as is at present known, no Buddhist work was published in China until a considerable time after the beginning of our era. In fact,

* This use of the word is not quite correct.

† Cf. Moore, *History of Religions*, p. 79.

when we remember that even the Sacred Books of the Southern or Pāli Canon were not (apparently) committed to writing until about eighty years B.C.,* and that a long period must be allowed to account for the development of the legends, theories, and accretions which distinguish the Mahāyāna or Sanskrit Canon from the teaching found in the Southern, it is evident that the Northern books must be much later in date. One of the Sanskrit works of the Northern Canon, the *Lalitavistara*, has been the subject of much discussion as to the date of its composition. Sir M. Monier-Williams thinks that the book† is “Probably as old as the second century of our era.”‡ This work was, it is said, early translated into Chinese. But it is admitted that this “first” version, if ever made, is no longer extant: and an examination of Beal’s *Romantic History* (which in p. 387 claims to be a version of the *Lalitavistara*, though it is elsewhere said to be a translation of the Mahāvastu, of the Foundation of the Vināya Piṭaka, and of the Abhinishkramaṇa-Sūtra) suffices to show how extremely unreliable such Chinese statements are. Beal himself states that the same name was in Chinese given to different works, and as an example of expansion gives from Dharmarakṣa’s (?)§ version of the Mahāparinibbāna-Sutta, an expanded account of Chanda’s conversation with Buddha near Kusināra (Beal’s translation of the “Fo-sho-hing-tsan-king,” pp. 365, *sqq.*). We know the date of the Chinese versions of some books: for instance, the Chinese translation of *The Awakening of Faith* was finished on September 10th, A.D. 554.¶ A great deal of Buddhist literature was translated early in the fifth century.¶

The Awakening of Faith is used as a text-book for the teaching of Buddhist priests in China. It is doubtless a translation from a Sanskrit original, called the *Śraddhotpādaśāstra*, the original of which has not yet been found. The work may have been correctly rendered into Chinese, without addition or omission, but, if so, it differs very considerably in

* Max Müller, *Six Systems of Indian Philosophy*, p. 5.

† *Buddhism*, pp. 69, 70.

‡ See the age of the *Lalitavistara* discussed in Professor Rhys Davids’ *Hibbert Lectures*, pp. 198–204.

§ Or Dharmākṣara.

¶ Suzuki’s version, p. 39.

¶ Comparison of the Chinese “versions” with the original Sanskrit (where the latter still exists, as in the *Buddha-carita*) shows how inaccurate these versions are, and how freely they have admitted additions from other sources. They are thus rendered wholly useless for scientific purposes, unless confirmed by the Sanskrit text in each case.

this respect from the great mass of other Chinese translations. The author's name is said to have been Aśvaghosha, a name of not uncommon occurrence; but authorities differ much in stating the date at which he lived. * Some think he wrote about 300, others 370, others 500, others 600 years after Siddhârtha's death. The latter date would place him in the first century of our era, and would probably lead to his identification with the author of the *Buddha-carita*. But many scholars are very doubtful indeed about this identification. In fact not a few Chinese accounts mention the author of *The Awakening of Faith* by quite different names. It is perhaps impossible at the present time to decide either his name or his date; but this is not of great importance in our comparison between Christianity and Mahâyânism, because it is not too much to say that there is not the remotest resemblance to be found in *The Awakening of Faith* to one single doctrine of the New Testament. Yet this is the book which a modern European writer ventures to entitle *The New Testament of the Higher Buddhism*!

To his credit be it spoken, Dr. Timothy Richard does not attempt, as not a few German and English writers have done, to bolster up his assertions regarding the supposed resemblance between Mahâyâna Buddhism and Christianity by referring to the absurd legends contained in the *Lalita-vistara* and other books of uncertain and late date accepted by the Northern school of Buddhists. It is, of course, evident that, as these books were all composed as least some considerable time after the Gospel had reached Northern India, their legends would in any case have no weight in the matter. The arguments adduced from them against Christianity have been fully met by Dr. Kellogg† and others. But there is one matter to which it is perhaps well to refer very briefly before concluding this paper, because it is frequently brought forward even now. I mean the assertion that the Virginity of Buddha's mother, Mâyâ, is taught in certain Mahâyâna books. This is quite contrary to fact. The doctrine is taught in neither the Northern nor the Southern Canon, nor is it accepted by Buddhists anywhere. On the contrary, in many places it is clearly asserted that *his father was Śuddhōdana* and his mother Mâyâ. In others there is the

* See Suzuki's "Introduction" to his translation of the book.

† *The Light of Asia and the Light of the World*. He completely answers Prof. Seydel's *Das Evangelium von Jesu in seinen Verhältnissen zu Buddha-Sage und Buddha-Lehre*.

statement that his birth was supernatural, but no hint is given of *Virgin-birth*. For example, in the *Sūtra of Brahma's Net*,* of which the influence in China and Japan is very great, (though its Sanskrit original is not yet found) there is the following statement :†

“At that time, Buddha Śākyamuni, after having previously shown himself in the East of the world enclosed in the lotus foreground, entered into the palace of the King of Heaven, and having there preached on the ‘Sūtra of the Māras who permit themselves to be converted,’ was born in Southern Jambudvīpa (India), in the kingdom of Kapilavastu. His mother was named Māyā, his father was surnamed the White and Pure (Śuddhōdana?), and his own name was that of Sarvathasiddha.”

In the *Buddha-ĉarita* of Aśvaghosha, ślokas 11, 16, and 17, Professor Cowell's rendering, Māyā is poetically described in these words :

“Like a mother to her subjects, intent on their welfare, devoted to all worthy of reverence, like Devotion itself, shining on her lord's family like the goddess of prosperity, she was the most eminent of goddesses to the whole world. Verily the life of women is always darkness, yet when it encountered her it shone brilliantly : thus the night does not retain its gloom when it meets with the radiant crescent of the moon.” He goes on to relate the well-known legend of Buddha's descent as a white elephant and of his thus entering into Māyā's womb : “Then, fallen from the Tushita-body (abode), the already mentioned best Bodhisattva, illuminating the three worlds, entered just into *her* womb, as an elephant-king into a delightful cave.” (Śloka 19.)‡

* Translated by De Groot in *Le Code du Mahāyāna en Chine*.

† *Op. cit.*, p. 26.

‡ The Sanskrit original runs thus : “Cyuto 'tra kâyât Tushitât trilokim uddyotayannuttamabodhisattvaḥ | viveśa tasyâḥ smṛita eva kukshau nandâguhâyāmiva nâgarâjah.”

It should be observed that, though Buddhist writers mention thirty-two superior signs of female excellence which must distinguish the mother of every Buddha (*cf.* Beal's *Romantic History*, p. 32), yet virginity is nowhere mentioned in such a connexion. Ex ea narratione tamen videtur creditum esse Buddae matrem, qua nocte ille conceptus sit, cum marito rem non habuisse. (This is clear from the *Mahāvastu*, Senart's edition, p. 5, ślokas 15, *sqq.*) After her dream about the white elephant, in the *Romantic History*, Māyā says to Śuddhodana, “Posthac nulla corporis voluptate fruar.” Hinc apparet eam antea ab huiusmodi delectatione prorsus non abstinuisse.

The result of our enquiry into the asserted relationship between Christianity and Mahâyâna Buddhism is therefore that the whole of the main principles of the two religions are totally opposed to each other. Their ideals are different, their aims are different, and what would be commended in the one system would be sternly condemned in the other. Such terms as *God, salvation, sin, prayer, eternal life, virtue*, and many others, convey to the Mahâyânist a meaning almost entirely contrary to that which a Christian understands by them. In the Mahâyânist view it is a terrible crime to kill and eat any living thing, but it is no harm to act as priest to Chinese worshippers of evil spirits, to offer adoration to an idol, or to incorporate Chinese, Japanese, or Tibetan gods into the pantheon. All things considered, the resemblance and even kinship between Christianity and the Greek and Roman forms of heathenism, with which it had in early days to contend to the death, was far closer than now exists between the Gospel of Christ and the corrupt Buddhism of the Far East. The invitation to recognize Mahâyânism as "an Asiatic form of the Gospel of Christ" is one which a study of the two religions forbids us to accept.

DISCUSSION.

The Rev. A. ELWIN said that anyone who had spent any length of time in China could not fail to come to the conclusion that Buddhism and Christianity were irreconcilably opposed. He himself had spent thirty years in China.

The Chinese speak much about the "Western Heaven." An entrance is won into the Western Heaven by the continual repetition of the formula O-mi-to Foh (Amida Buddha). In the morning, as one goes along the street, one may pass a shop sometimes, and hear a ceaseless buzzing sound; women are repeating these words as fast as they possibly can, counting the beads of their rosaries at the same time, each rosary having a hundred beads. It is not necessary in order to reap the advantage of these repetitions that one should repeat the sacred words oneself; it was sufficient to pay someone to do it for you, and the women in the shop were doing it for hire. In the Western Heaven there was neither sin, nor suffering, nor sickness, nor sorrow, nor women—for if a woman repeated the mystic words often enough, in the Western Heaven she became a man.

The paper we had just heard was very interesting; it was a paper to be prized, and to be kept by one for reference.

He knew Dr. Timothy Richard. He went out as a missionary to China to preach the Gospel. He wondered what Dr. Richard thought the Gospel really was : he could have no real grasp of it, or he could not have confused the two—Mahâyâna Buddhism and Christianity. Dr. Tisdall's conclusion was emphatically right : "A study of the two religions forbade us to recognize Mahâyânism as an Asiatic form of the Gospel of Christ."

Mr. M. L. ROUSE said that he had had the pleasure of listening to a lecture from Dr. Tisdall at St. Michael's, Cornhill. Dr. Tisdall said there that that which St. James had condemned, viz., saying to a needy person, "Depart in peace, be ye warmed and filled," without giving those things which were needful for the body, was very poor Christianity, but it was quite good Buddhism.

The Rev. JOHN TUCKWELL said he was extremely grateful to Dr. Tisdall for a most valuable and important paper. He had been for many years interested in the Missionary Society which sent Dr. Richard out to China, and he believed he was correct in saying that his views when first published had excited great concern both in the Committee and the Denomination to which Dr. Richard belonged. But Dr. Richard had for many years been President of the "Christian Literature Society of China," and was now invalided, and had very little connection with any society whatever.

He congratulated the Victoria Institute on having had such a paper as that to which they had listened that afternoon. There was a tendency abroad to take little studies of heathen philosophy and associate them with the doctrines of Christianity under the title of "Comparative Religions." But there was in truth very little connection between Christianity and any other religion, or between the Bible and any other "sacred books." The Buddhistic view of the universe, however, appears to have much in common with the materialistic view of the universe with which Haeckel has made us familiar in his doctrine of Monism, by which he ascribes thought, emotion and will—in fact all the principal elements of personality, to his original uncreated monistic substance. Haeckel's substitute for God resembles very much the indefinable "Suchness" of Buddhism and the effort to correlate such heathen doctrines with the doctrines of Christianity could only have the effect of belittling Christianity.

Professor LANGHORNE ORCHARD said that they had listened to a paper of profound human interest.

In Haeckel's view, mind was developed out of matter; in the Buddhist manual; *The Awakening of Faith*, the same idea is brought forth. The root idea was that the universe was self-existent, without will or consciousness.

He would like to ask the Lecturer how he accounted for murders being so common in Buddhist countries, seeing that Buddhists were so careful of animal life. He would also like to ask what was the Buddhist's notion of sin.

The CHAIRMAN considered Buddhism to be a serious declension from Hinduism, the latter teaching a greater sense of sin. Buddhism was, therefore, even more than Hinduism, opposed in its spirit to Christianity.

False religions originating in declensions from, or corruptions of, the one true God-revealed religion, it was only reasonable to suppose that they would, more or less, retain traces of it, and touch it at certain points.

In Genesis i we are told of the Creation of the heavens and the earth. Were the heavens material or ethereal? If the latter, they would seem to correspond to the Buddhist Tao.

In the name of the Meeting, he asked Dr. Tisdall to accept their sincere thanks for his most admirable and instructive paper.

The LECTURER thanked the audience for the great attention which they had paid to what he feared was a dull paper.

The Buddhist's idea of sin was anything that tended to hinder progress toward Nirvana, or personal extinction; the opposite of this was the Buddhist idea of virtue. Sin, therefore, was to do that which was inexpedient. There was no sense of a breach of law, because there was no law, since there was no lawgiver.

With regard to the prevalence of murders in Ceylon, that was a region where Hīnāyāna Buddhism prevailed, not Mahāyāna Buddhism. The reason of the small regard for human life seemed to be that no real distinction was felt between the ego of the man and that of the animal. Fish were killed for human food—why not a man if he stood in one's way, and if you were benefited by his death? The murdered person would revive in some other form.

The Buddhist use of holy water, of praying beads and the like, was earlier than their use by the Roman Catholics, who, therefore, could not have given them to the Buddhists.

The Meeting adjourned at 6 p.m.

570TH ORDINARY GENERAL MEETING,

HELD IN COMMITTEE ROOM B, THE CENTRAL HALL
WESTMINSTER, ON MONDAY, MAY 17TH, 1915, AT 4.30 P.M.

E. J. SEWELL, ESQ., IN THE CHAIR.

The Minutes of the preceding Meeting were read and confirmed.

The SECRETARY announced that Mr. Walter Henry Bacon, the Rev. William Edgar Woodhams Denham, and Miss Jessie Little had been elected Associates of the Institute.

The CHAIRMAN introduced the Rev. Archibald R. S. Kennedy, M.A., D.D., Professor of Hebrew and Semitic Languages in the University of Edinburgh, and called upon him to address the Meeting on the subject of "Hebrew Weights and Measures."

HEBREW WEIGHTS AND MEASURES. By Professor ARCHIBALD R. S. KENNEDY, M.A., D.D.

THE sources of our information regarding the weights and measures of the nations of antiquity are of two kinds, monumental and literary. Under the first head, the monumental evidence, fall (*a*) such actual standards of measurement as have survived to our own day—inscribed weights, measuring-rods, etc., and (*b*) other archæological remains, such as coins and buildings, from which their respective units of weight and of length may be readily deduced. The literary evidence is also of a twofold character, since it includes (*a*) the direct evidence of early writers on metrology, and (*b*) the more or less incidental references in ordinary writers to the values of the various standards in use in their day.

As regards Hebrew weights and measures in particular, the monumental evidence is exceedingly limited. Indeed it is only in the department of the weight-standards of Palestine, for which a considerable amount of fresh evidence has recently come to light, that we have monumental data of any extent. As for the literary evidence, it may be said that while the Biblical data are on the whole sufficient to enable us to reconstruct the various scales, and to determine the *relative* values of the different denominations in each scale, we are dependent

on later writers, among whom Josephus is pre-eminent, for the valuation of these in terms of the better-known Greek and Roman measures.

The aim of this lecture is to provide a summary of our present knowledge of the weights and measures current in Palestine from the Hebrew conquest to the end of the Jewish state in A.D. 70, distinguishing at the same time results that are certain, or fairly certain, from those to which only varying degrees of probability can be assigned. Where my results differ from those of other students in this field, I shall do my best to state as clearly as possible the evidence on which these results are based.

Before proceeding to details, however, I wish to make two remarks of a general nature. The first is a reminder that the Hebrews were the heirs of the older Canaanites, whom they dispossessed of their land and whose advanced civilization they adopted. When, therefore, we speak of the weights and measures of the Hebrews, in the pre-exilic period of their history at least, we are really dealing with the metrology of the earlier inhabitants of Canaan. The second remark is this: the key to the metrology of Palestine is found in its geographical position. From the earliest times, Palestine was the meeting place of the two great civilizations of the ancient world, the Babylonian and the Egyptian. It is natural, therefore, to expect that its metrology would reflect this fact of history, and such we shall find to be the case.

I.—HEBREW WEIGHTS.

Passing now to the more detailed exposition of the three main systems of weights, measures of length, and measures of capacity, I propose to begin with the department of Palestinian metrology for which the monumental evidence is most abundant and most decisive, viz.: the weight-standards of Palestine.

The excavations carried out in the last twenty years or more by our own Palestine Exploration Fund, and by the Germans, Austrians and others, have brought to light a very large number of ancient Palestinian weights. Professor Macalister's great work, *The Excavation of Gezer* (ii, 278–292), alone contains a descriptive list of well over two hundred weights. These, with similar material from other sites in south-west Palestine, from Taanach, Megiddo, Jericho and Jerusalem itself, await the attention of an expert metrologist. A modest beginning was made by myself two years ago (see *Expository Times*, xxiv,

August and September, 1913, "Inscribed Hebrew Weights from Palestine"); the results will be summarized below. Cf. E. J. Pilcher, *Weights of Ancient Palestine* (from *P.E.F.St.*, 1912).

The weights in question are almost all of stone, as we should expect from the Old Testament references, where the Hebrew word rendered "weight" literally means "a stone" (Leviticus xix, 36, Deuteronomy xxv, 13, 15, etc.). "Hard, compact, and heavy stones, capable of taking a polish, such as hæmatite, jasper, basalt, and quartzite, are the stones chiefly used" (Macalister, *op. cit.*, ii, 279f—where see fig. 429 for illustration of "typical forms of weights"). For the smaller weights the two commonest forms are the shuttle-shaped and the dome-shaped, the former tapering to a blunt point at both ends, the latter "either hemispherical, or more or less cylindrical, with convex top and plane base."

The influence of Babylonia on the Hebrew weight-system is seen in the adoption of the Babylonian scale of three denominations based on the shekel as unit; 50 shekels made a mina (Hebrew *māneh*), and 3,000 shekels, or 60 minas, a talent. That the shekel was the unit of weight among the Hebrews is evident from the rarity of the term mina in the Old Testament. The pre-exilic writers, indeed, never use the mina or "pound," preferring to express even large weights of silver in terms of the shekel, and the largest as so many talents and shekels.

A very slight acquaintance with the actual weights recovered from the soil of Palestine reveals the existence side by side, in ancient times, of a bewildering variety of standards of weight. Let me try to pass in review the more assured, at least, of these standards.

(i) *The Phœnician or 224-grain shekel.*

This is the best attested of all the Palestinian weight-standards. Its unit is the shekel universally known as the Phœnician shekel from the fact that the rich series of silver coins struck by the great trading cities of Phœnicia, such as Tyre and Sidon, are on this standard. The highest effective weight shown by the coins is 223·8 grs. (Hill, *Brit. Mus. Cat.* [B.M.C.], *Coins of Phœnicia*, p. cxxxiv), and the theoretical weight of the shekel is usually reckoned as 224·6 grs. The average weight, however, of the shekels or tetradrachms of the coinage both of the Phœnician cities and of the Ptolemies of Egypt, who adopted this standard, may be set down as about 218 grs., the weight of our own half-crown.

Now the shekel of 218–224 grs. has this special interest

for us to-day, that beyond all doubt it is *the Hebrew silver shekel, in terms of which money was weighed and paid in all periods of Hebrew and Jewish history*. Other shekels, as we shall see, were known and used, but *this shekel is the Hebrew shekel par excellence*. It is "the shekel of the sanctuary," more correctly, as in the Greek translation, "the sacred shekel," so frequently used in the priestly sections of the Pentateuch legislation (*see the detailed argument in my article, MONEY, in Hastings' Dictionary of the Bible [H.D.B.], iii, 422*).

This identity of the Hebrew and Phœnician shekel (mina and talent) is further shown (1) by the fact that the famous Jewish shekels and half-shekels of the years 1 to 5 are on this standard, the best specimens in the British Museum register 218 to 220 grs.—it is immaterial for my argument whether you regard them as struck by Judas Maccabæus or, as I have always held, by the leaders of the First Revolt, A.D. 66–70; (2) by Josephus' valuation of the Tyrian and Hebrew shekels equally at 4 Attic drachms (*B.J.*, II, xxi, 2, *Ant.* III, viii, 2); and (3) by the express evidence of the Mishna, which lays down that "all payments according to the sacred shekel are to be made in Tyrian money" (*Bekoroth* viii, 7).

In the Pentateuch the "sacred shekel" is defined as "twenty gerahs," themselves defined by the Greek translators as "20 obols." Its talent of 3,000 shekels (673,800 grs.) is thus equivalent to 60,000 obols or 10,000 Attic drachms of 67·38 grs. The importance of this equation will appear in the sequel.

Passing now from the evidence of the coins to that of existing stone weights, it is interesting to find that the largest Hebrew weight known to me is a Hebrew talent on this same standard. It is a cylindrical stone weight said to weigh $42\frac{1}{2}$ kilogrammes, say $93\frac{3}{4}$ lbs. avoird., now in the museum of St. Anne's at Jerusalem. An inscription is said to read "weight of King David, 3,000 shekels," but to me, at least, it is quite illegible (*see Jewish Chronicle*, August 16th, 1912)! The corresponding shekel ($\frac{1}{3000}$) is 14·18 grammes or 218·8 grs. By far the largest weight found by the Germans at Megiddo weighed 2,775 grammes, which represents a weight of four minas, or 200 shekels of about 214 grs. A large proportion of the weights found by Mr. Macalister at Gezer, from $\frac{1}{4}$ and $\frac{1}{2}$ shekel upwards, belong also to this system. Professor Flinders Petrie, twenty years ago, assigned 44 per cent.—27 out of 61—of the Lachish (Tell el-Hesi) weights to the Phœnician standard.

It only remains now to explain briefly the latest weight-system of the Jews in the later Roman period, as found in the Mishna in use both for money and merchandise. It will be seen to be an ingenious combination of elements derived from Phœnicia, Greece and Rome. Its composition is shown in the following table:—

THE LATEST JEWISH WEIGHT-SYSTEM.

Denarius-drachm (Heb. <i>záz</i>)	1					52·63 grs.
Shekel (old $\frac{1}{2}$ shekel)	2	1				105·26 „
Sela (original shekel)	4	2	1			210·52 „
Mina (light)	100	50	25	1	}	5263 „
Mina (heavy)	200	100	50	2	}	10526 „
Talent (light)	6000	3000	1500	60	1 }	315780 „
Talent (heavy)	12000	6000	3000	120	2 }	631560 „

The system, it will be seen, is based on the denarius, which as $\frac{1}{96}$ of the Roman libra or pound of 5,053·3 grs., and $\frac{1}{8}$ of the uncia, formed a convenient unit for an international system of weights. It was fitted into the Greek system as the equivalent of the lowered Attic drachm, with the latter's subdivision into 6 maahs or obols, omitted in the above table, and into the older Hebrew system as one-fourth of the original shekel, now somewhat lowered and named *sela* (*cf.* Josephus, *Ant.* III, viii, 2, the old Hebrew shekel = 4 Attic drachms). The term shekel, however, is now confined to the original half-shekel, or light Phœnician shekel. As in the Greek system, the light mina or “pound” contained 100 denarius-drachms, or 50 light shekels, while the heavy and original Hebrew mina contained 50 of the original shekels. The former, although really $\frac{1}{24}$ more than the Roman pound (*libra*), was popularly regarded as its equivalent, the terms *maneh* and *litra* being interchangeable in the Mishna. Each mina had, further, its corresponding talent; the heavy talent of 60 heavy minas, containing 12,000 denarii, weighed exactly 125 Roman pounds ($\frac{1}{96}$ lb. \times 12,000 = 125), the new system thus fitting admirably, at top and bottom, into the Roman imperial system. This value of the Hebrew talent under the Empire—say 90 lbs. avoird.—is vouched for both by the early writers on metrology, and by an existing talent weight with the legend PONDO CXXV TALENTVM SICLORVM [M] III., *i.e.*, 125 pounds or 3,000 (heavy) shekels.

(ii) *The Babylonian or 252-grain shekel.*

That this is the value of the original Babylonian shekel has been amply proved by the researches of Professor Lehmann-Haupt. By this indefatigable metrologist, indeed, it is regarded as the basal unit of all the weight-systems of antiquity. By this shekel and its 60-fold or mina, merchandise and the precious metals were alike weighed in Babylonia itself; but in commercial dealings with the West, it is maintained, a special mina of 50 shekels was introduced for the weighing of gold. Now in almost all the recent textbooks and dictionary articles, my own included, you will find it stated that this shekel of 252 grains was also the gold standard in use among the Hebrews. But a fresh examination of the evidence in the course of preparing this lecture leads me to have serious doubts as to the validity of the accepted opinion.

The principal witness for the use of the Babylonian gold shekel and its multiples by the Hebrews has hitherto been believed to be Josephus. This writer, in his account of the visit of the triumvir Licinius Crassus to Jerusalem in 54 B.C. (*Ant.* XIV, vii, 1) tells how the latter robbed the temple of its vast deposits of gold and silver, including a beam of solid gold weighing 300 minas, and adds: "Now among us the mina is equal to $2\frac{1}{2}$ litras (Roman pounds)." According to this statement the gold mina in Josephus' day weighed 12,633 grs., which yields a shekel ($\frac{1}{50}$) of 252.6 grs., the precise value of the heavy Babylonian shekel. On this basis, accordingly, the tables of the Hebrew gold weights in the current textbooks, etc., have been constructed. But, as I have said, I am now convinced that we have been led astray in this matter by the historian's manner of expression.

In placing before you the grounds for this revolutionary conclusion, I propose to start from another passage of Josephus which has caused much perplexity to metrologists. In an earlier part of the same work (*Ant.* III, vi, 7) the historian gives the weight of the golden candlestick of the Tabernacle both as a talent—as in the original source, Exodus xxv, 39—and as 100 minas. Now the strange equation of a talent with 100, instead of 60 or 120, minas shows that Josephus is here expressing the talent of one weight-system in terms of the minas of another. But we know from the Pentateuch, Josephus' sole authority, that the talent in question is the Hebrew-Phœnician talent of 3,000 "shekels of the sanctuary," originally 673,500 grs., but reduced when the *Antiquities* were written to 631,560 grs. (*see table*

above). The $\frac{1}{100}$ part of this talent gives a mina of 6,735 to 6,315 grs.; but this is precisely the range of the *Syrian-Attic monetary mina* in Syria and Palestine under the Seleucid dynasty (for actual weights *see* below). Josephus, therefore, here informs us that a (heavy) Hebrew talent of *gold* was equal in weight to that of 100 Attic minas, or 10,000 drachms. But I would specially ask you to note that the same applies to Josephus or his authorities, when reckoning with talents of *silver*, as anyone may see who takes the trouble to compare the various entries of the revenues of Herod and his family in book XVII of the *Antiquities* (*cf.* XIX, viii, 2). Here talents and ten thousands of drachms are used interchangeably. Again Herod's bequest to Augustus and his family is given in XVII, viii, 1, as 15,000,000 drachms, but in xi, 5, as 1,500 talents, showing as before that Josephus knows only *one* talent of 10,000 (reduced) Attic drachms. Elsewhere, it is true, in a passage already twice cited, he tells us that the Hebrew silver shekel was equal to 4 Attic drachms, which gives 12,000 for the talent. Here, however, "Attic drachms" are the denarius-drachms of the late Jewish system explained above; the weight and intrinsic value of the talent are the same in both equations.

Returning now to the crucial passage which has hitherto been supposed to disclose the Babylonian gold standard, I ask your particular attention (1) to the fact that there is no hint of any distinction between the standard of the "2,000 talents of (silver) money" and the "8,000 talents of gold" in the temple treasury, and (2) to the alternative weights given to the gold beam in question, *viz.*, 300 minas each of $2\frac{1}{2}$ Roman pounds, and, near the end of the section, "many ten thousand (drachms)," that is, as we have just seen, "many *talents*," in reality only six! From this, in the light of the results of the preceding paragraph, we see that *the talent is the same heavy Hebrew-Phœnician talent*, equal in weight to 10,000 Attic drachms; only—and here, in my opinion, lies the solution of the apparently irreconcilable discrepancy between the two passages—Josephus, instead of reckoning the talent of 125 Roman pounds at 100 ordinary or light Attic minas of $1\frac{1}{4}$ pounds, as in the former passage, here reckons it at 50 heavy Attic minas of $2\frac{1}{2}$ lbs. each.*

* The value of the talent of 125 libras of gold, at the British mint price, may be put at about £5,125. The amount of gold in the temple treasury, 8,000 talents, would thus reach the huge total of £41,000,000 sterling. The monetary value of the silver talent of the same weight on the basis of 25 denarius-drachms to the pound sterling was £480.

The main support for the current view that the Jews weighed their gold with the Babylonian shekel, mina and talent, is thus swept away. We find instead that the two well-known standards, the Phœnician and the Attic, were used side by side for gold as well as for silver, and that the heavy Hebrew-Phœnician talent was reckoned as containing on the one hand 60 heavy, or 120 light, Phœnician minas, and on the other 50 double or 100 ordinary Syrian-Attic minas. This equation of the two standards doubtless prevailed throughout the Greek period of Jewish history.

The practice of the pre-exilic period I am content to leave an open question at this stage: it will meet us again immediately. I would only say that I am not convinced by another argument for the use of the Babylonian gold standard by the Hebrews. In II Kings xviii, 14, we read that Hezekiah was ordered by Sennacherib to pay an indemnity of, *inter alia*, 30 talents of gold, which is the precise sum mentioned in the Assyrian record of the invasion. The inference is a natural one, that the Assyro-Babylonian and Hebrew gold talents were identical. But there are difficulties in the way which it would take too long to specify at present.

(iii) *The Syrian or 160-grain Standard.*

About twenty-five years ago there was first published a tiny shuttle-shaped weight from Samaria of $39\frac{1}{4}$ grains, the double inscription on which gave rise to an excited controversy among Old Testament scholars. On one side, in old Hebrew characters, were the words "quarter of a N-Z-PH" (provisional pronunciation "nezeph"). Since then several small dome-shaped weights have turned up from various parts of Palestine with this legend "nezeph." Like all ancient examples of a given unit, they vary considerably in weight; but when we remember that these small weights were used exclusively by retailers of the precious metals in the form of rings and similar ornaments, we need not hesitate to estimate the full value of the nezeph standard as about 160 grs., a standard which Flinders Petrie, many years ago, found largely represented in Egypt, only he estimates it wrongly at 80 grains. The Chaplin weight, first mentioned, yields a value of 157 grs. for its 4-fold the nezeph, which is about the weight of the best specimens.

As for the origin of this new Palestinian standard, I still adhere to the explanation given in 1902 (*H.D.B.* iv, 905) that we have here a shekel derived from the light Babylonian trade

mina of 7,580 grs. (60 light shekels of 126·4 grs.) on Lehmann-Haupt's "raised Norm A,"—*i.e.*, raised 5 p.c.—or 7,960 grs. A weight is still in existence inscribed "Mina of King Antiochus Theos Epiphanes," which weighs precisely this amount, and other inscribed minas of Antioch range about 8,000 grs. In the West, I have suggested, this mina was divided into the usual 50 shekels of 160 grs. nearly. This derivation is not affected by the proposed identification of the term nezeph with the Arabic *nusf*, meaning a half; in this case the former would be the light form of a corresponding heavy shekel of 320 grs., derived as above from the heavy trade mina of Babylonia.

This 160-grain standard is very largely represented among Mr. Macalister's Gezer weights, especially among those from the older Semitic strata. This is what we should expect if I am right in believing that the gold payments of the Princes of Syria to their Egyptian overlords in the sixteenth century B.C. were calculated on the nezeph standard (*loc. cit.*, 904).

Its special interest for us, in the light of the preceding section of my lecture, is that the nezeph has as good a claim as, if not a better claim than, the Babylonian shekel to be regarded as the Hebrew gold shekel of the pre-exilic period. In the first place it is admittedly a gold standard, and is found on the spot; secondly, it stands in a most convenient relation to the Hebrew silver shekel of 224 grs., since with gold to silver as 14:1 one nezeph of gold was equal in value to 10 shekels of silver ($160 \times 14 = 224 \times 10$); thirdly, there is a curious tradition preserved by the Jewish writer Maimonides that the Hebrew shekel was originally the weight of 320 grains of barley, our Troy grains, and so continued until the time of the second Temple, when it was displaced by the *sela*, *i.e.*, the heavy Phœnician shekel (*see* table above). Is there not here a problem calling for further investigation? At any rate, no one can deny that the nezeph-shekel was, if not *the*, at least *a*, gold shekel both before and after the Hebrew conquest of Canaan.

(iv) *The Persian Silver Standard.*

With the fall of Babylon in 538 B.C., Palestine became a part of the vast Persian Empire under Cyrus and his successors. Of the latter Darius Hystaspis has a special claim on our attention, since his famous gold coin, the daric, and its twentieth in value, the "Median siglos" in silver, were the first coins to circulate in Palestine. The daric weighed 130 grs. of pure gold, nearly

7 grs. more than our sovereign of 22 carats fine, and was a light Babylonian shekel of the so-called "royal" standard. At the then current price of gold in terms of silver ($13\frac{1}{3}:1$), it was worth ten light silver shekels or staters of 173·3 grs. ($130 \times 13\frac{1}{3} = 173\cdot3 \times 10$), or twenty half-shekels of 86·6 grs. The latter weight was selected by Darius for his silver coinage. The siglos, the Græcized form of the Babylonian *shiklu*, was thus not what its name suggests, a true shekel or stater, but a half-shekel.

Now among the weights published by Professor Macalister in his *Exploration of Gezer* (ii, 285, fig. 433) is a small weight of 343·8 grs., described as "the frustum of a pyramid," and bearing in old Hebrew characters the interesting legend "ii of the King's (shekels)." (Fig. 1.) Its weight identifies it as a double-shekel on the Babylono-Persian silver standard as just explained. A close parallel to the above inscription is furnished by a reference to a loan in one of the recently discovered Jewish papyri from Elephantine (Sachau, No. 28, l. 4), which amounted to "4 shekels by the weights (literally, stones) of the King." The latter expression, in its turn, recalls the weight of Absalom's hair, II Sam. xiv, 26—probably a reader's gloss from the Persian period—viz., "200 shekels after the King's weight (lit., stone)." The shekel of this passage, however, is the ordinary trade shekel of 126–130 grs., not the exclusively silver shekel of the Gezer weight. The latter, further, enables us to fix with precision the amount of silver entered in the lists of gifts in the books of Ezra and Nehemiah. The mina, or "pound," of our Version is, of course, 50 of "the king's shekels," or rather less than $1\frac{1}{4}$ lbs. avoirdupois. The gold is entered as so many *darkemônim*, or drachms (A.V. drams, R.V. darics) of 126–130 grs., so named as being $\frac{1}{100}$ part of the heavy Babylonian gold mina.

Returning from the literary to the monumental evidence of the presence in Palestine of the Persian silver standard, I make out that it is entitled to claim at least a fifth of the weights in the Gezer collection, ranging from the quarter and half-shekel, or siglos-weight, up to 15 shekels. Similarly, at least a fourth of the weights found in the fifth stratum at Megiddo appear to belong to this standard.

Now if we accept the view of modern criticism that the Priest's Code assumed its final shape in the early Persian period, we can understand the emphasis with which it is laid down that all reckonings are to be made by "the shekel of the sanctuary"; in other words, in terms of the national Hebrew-Phœnician shekel as opposed to the popular Persian shekel of the government currency.

WEIGHTS RECENTLY FOUND IN PALESTINE.



FIG. 1.—PERSIAN WEIGHT,
"2 (SHEKELS) OF THE KING."

$\frac{1}{2}$ inch




FIG. 2.—PALESTINIAN WEIGHT WITH
PREVIOUSLY UNKNOWN SYMBOL.



FIG. 3.—HEBREW WEIGHT,
INSCRIBED פִּיט OR פִּיט (?).



FIG. 4.—GEZER MARKET WEIGHT.

Here, too, I propose to place, provisionally at least, a series of ten or twelve inscribed weights from various parts of Southern Palestine, including Jerusalem and its neighbourhood, and, let us note, "the Persian and Hellenistic" strata of Gezer. The distinguishing feature of the series is the presence of a symbol resembling X with a connecting bar across the top, , and standing for the unit or shekel of the series. (Fig. 2.) It is accompanied by numerical signs belonging to a hitherto unknown notation, the value of which, however, may be inferred from the weight relative to the two known signs I and II. Of the ten catalogued by Mr. Macalister (*op. cit.*, ii, 287 ff., *cf.* Pilcher, *P.E.F.St.*, 1912, 191) two must be set aside as decidedly abnormal or fraudulent; an average of the remaining eight gives a unit of approximately 175 grs., a trifle in excess of the normal Persian silver shekel. Staters of this as a maximum value were struck in Cyprus and at Aradus, in Phœnicia, in the Persian period.

We have not quite finished with this popular standard, for a still more perplexing problem is presented by three small weights which have recently come to light, each inscribed with three old Hebrew or Phœnician characters, the meaning of which is still to seek. The average weight of the three is 116.4 grs., and as, *faute de mieux*, I would read the inscription (Fig. 3) as a contraction of the Hebrew words for "two-thirds" (*Exp. Times*, xxiv, 541), we reach a unit of 174.6 grs., almost identical with the unit last mentioned, which was referred to the Persian standard. (For the latest attempts to solve the riddle of the mysterious trinity of letters, see *P.E.F.St.*, 1914, 99; 1915, 40f.)

(v) *The Æginetan Standard.*

One of the oldest and most widely spread weight-standards of antiquity, believed by eminent metrologists (Hultsch and Petrie) to have been in use in Egypt as far back as the time of Khufu, the builder of the great pyramid, is that known as the Æginetan. The name is due to its having been adopted as the standard of the earliest currency of Europe, that of the island of Ægina. Besides being the almost universal commercial standard in Greece, it was in use all round the Eastern Mediterranean, including Cyprus and Crete. It need not surprise us, therefore, to find among the Gezer weights a square leaden disc weighing 4.923 grs. (about 11¼ oz.), with the official inscription of the Agoranomos: "Year 84(?)"—this, if correctly read, is 229–228 B.C.—"of Sosipater, Controller of the market, ½ mina."

(Fig. 4.) This yields a mina of 9,846 grs., and a drachm of $98\frac{1}{2}$ grs., revealing the well-known standard of Ægina. Of later date and yielding a slightly higher drachm is another square leaden weight, also figured in the *Gezer* volume (ii, 286, fig. 435). It weighs 4,068 grs. and is ornamented by two cornucopias crossed, a symbol of the later Seleucid kings, within and around which are a Greek Δ , the sign of 10, *deka*, and four balls symmetrically arranged. This I now interpret as four dekadrachms, or 40 drachms of 101.7 grs.

To the Æginetan standard must be assigned a considerable number of the ordinary uninscribed Gezer weights, from half-drachms upwards. One weight in particular, marked with five strokes and weighing 995 grs., is clearly five Æginetan shekels or didrachms. The same holds good of the weights recovered by the Germans from the site of the ancient Megiddo, such as the series weighing $9\frac{1}{2}$, 19 and 38 grammes, or $1\frac{1}{2}$, 3 and 6 Æginetan drachms of just under 98 grs. (Schumacher, *Tell el-Mutesellim*, 104). Of the weights from Lachish (Tell el-Hesi) no fewer than 30 per cent. belong to this system, a percentage surpassed only by the weights on the Phœnician standard (*P.E.F.St.*, 1892, 114).

Here, in my opinion, we must also include a series of three small dome-shaped weights of values ranging from 90.58 to 102.7 grs., with an average of close on 96 grs. All three are inscribed with the Hebrew word *beḳa*, or half-shekel (Exodus, xxxviii, 26, where the Greek translators render "one drachm per head, the half of a shekel"). These *beḳa* weights, therefore, I reckon as Æginetan drachms, each half of the shekel of the five-shekel Gezer weight mentioned a moment ago.

Under this head, finally, I would also place a tiny inscribed weight in bronze—unique, so far as I know—which came from Samaria. The Hebrew inscription may be read as "five" or as "a fifth," but as the weight is only 38.6 grs., the latter is the only possible interpretation. I take it, therefore, to be $\frac{1}{5}$ of an Æginetan shekel of 193 grs., of which we have just seen the *beḳa* weights to be one-half. This is confirmed by the shape of the weight, which is that of a turtle or tortoise, animals inseparably associated with the coinage of Ægina.

(vi) *The Attic Standard under the Seleucids.*

When Solon reformed the metrology of Athens he rejected the Æginetan in favour of the Euboic-Attic standard for the new currency, while retaining it for all commercial purposes.

The Attic standard was adopted by Alexander the Great for his international currency, and continued by his successors, the Seleucid kings of Syria, under whose rule the Jews passed from that of the Ptolemies in 198 B.C. From this date drachms and tetradrachms on the Syrian-Attic standard were the legal currency of Palestine; the talents and drachms of the books of Maccabees are those of the Syrian currency. It was probably in this period that the practice which we found in Josephus began of reckoning a Hebrew-Phœnician talent as the equivalent of 10,000 Syrian-Attic drachms (*cf.* Jos., *Antiq.* XII, iii, 3—Antiochus' grant for the temple service of 20,000 drachms or two talents).

From the Seleucid town on the site of the modern Sandahannah in South-west Palestine were recovered at least two weights on this standard. The smaller of the two is another leaden market-weight with the legend "Of Agathocles, Controller of the market" (Bliss and Macalister, *Excavations in Palestine*, 61, fig. 28). Its weight of 2,238 grs. shows it to be a tritemorion, or third of an Attic mina with a drachm of the normal value of 67 grs. The other weight is a large circular bronze, $4\frac{1}{2}$ inches in diameter, and weighing nearly $1\frac{1}{2}$ lbs. avoirdupois. It represents an Attic mina and a half, somewhat over weight, and agrees remarkably with two of the larger weights of the same period at Gezer, which work out at one half and $1\frac{1}{4}$ of the same mina.

Let me now sum up in a single sentence the results of this long investigation. Confining myself exclusively to the evidence of inscribed weights, including coins, I have traced the use of the following seven weight standards in Palestine in Bible times: (1) at all periods, from the earliest to the latest, the national *Hebrew-Phœnician* shekel,—the "sacred" shekel of the Priests' Code, required for all transactions with the balance—of the theoretical value of 224 grains, but with an actual range of 230–210 grs.; (2) the early Eastern standard, best known as the *Æginetan*, or Attic commercial, standard, originally of 100 grs. more or less; (3) the perhaps equally ancient *Syrian* standard—probably originally of Hittite origin—of 160 grs., with a strong claim to be admitted as the Hebrew gold shekel of pre-exilic times; (4) the *Babylono-Persian* light gold shekel of 130 grs., introduced by Darius, the older form of which (126 or its double, 252 grs.) is currently accepted, but without conclusive evidence, as the Hebrew gold shekel; (5) the *Babylono-Persian* silver shekel of 173 grs.—the two last standards also in the books of Ezra and Nehemiah;

(6) in the Seleucid period the *Attic* monetary standard, of which the drachm ranges from 67–63 grs., and (7) the *syncretic weight-system* of the Roman period, combining and adjusting elements of the Phœnician, Greek and Roman systems, with its talent of 10,000 Syrian-Attic drachms or 12,000 Phœnician drachms, or Roman denarii.

II.—MEASURES OF LENGTH.

The earliest standards of measurement everywhere are those of Nature's own providing, the finger, the hand, the foot; the almost universal cubit is the length from the elbow to the tip of the middle finger. The largest of the natural measures is "the stretch," the Greek *orguia* (Acts xxvii, 28) or fathom, which is practically equal to the height of the individual, or four times the cubit-length. The native Hebrew measures were based on this natural scale, but without the foot and the fathom. The names of the several members of the scale are known to us from the Old Testament, and are given in the table below. The three most important are the finger breadth or digit, the handbreadth or palm of 4 digits, and the cubit of 6 palms or 24 digits. If, then, we can determine the absolute length of any one of these, we can easily calculate the value of the others.

For this purpose one naturally turns first of all to the Hebrew scriptures, but the result is disappointing. Take, for example, the statement in Deut. iii, 11, regarding the basalt sarcophagus of Og, King of Bashan, which is said to have measured 9 cubits by 4, "after the cubit of a man." In modern English this means "in terms of the natural cubit," which, as I have said, was reckoned in antiquity as one-fourth of the height of an average man. Four such natural cubits is the length prescribed by the Jewish law for the last resting-place of the human body (*Baba bathra* vi, 8). In Egypt this cubit was reckoned at 17·7 inches, in Greece about 17·47 inches. There and thereabouts we must place the Hebrew "cubit of a man."

When we turn to the Jewish historian Josephus, we find that while he frequently gives us the value of the Jewish weights and measures of capacity in terms of Greek metrology, he nowhere does this with the measures of length. The inference is unavoidable that such a comparison was unnecessary, owing to the practical identity of the Jewish and Greek measures of length. This inference is confirmed by a comparison of Acts i, 12, where the distance of the Mount of Olives from Jerusalem is given as

a Sabbath-day's journey, which was 2,000 *Jewish* cubits, with the *Antiquities*, XX, viii, 6, where the distance is given as five stadia, which are 2,000 *Greek* cubits.

As regards the monumental evidence, we have no actual standards to tell their tale, as was the case with the Jewish weights. No measuring rods have survived, such as are frequent in Egypt. Such monumental evidence as is available is all, therefore, indirect. From the reign of Hezekiah, probably, we have the Siloam tunnel or aqueduct with its famous inscription giving the length as 1,200 cubits. According to the learned archæologist, Père Vincent, who recently had a unique opportunity of taking exact measurements, the actual length of the tunnel is between 533 and 534 metres, say 1,750 feet, more or less (*Rev. Biblique*, 1912, 425*f*). This gives $17\frac{1}{2}$ inches for the cubit, but unfortunately the 1,200 cubits of the inscription is, from the nature of the work, only the nearest approximate round number; from the literary evidence, however, we know that $17\frac{1}{2}$ inches cannot be far out.

A few years ago it occurred to me to examine the remains of Herodian masonry with the assistance of the very full and detailed measurements in the reports of the British surveyors, Sir Charles Wilson, Sir Charles Warren, and others. The results were published in a series of papers in the *Expository Times*, vol. xx (1908-09). Let me give you briefly one or two of the more striking. Taking some of the more important of the lower courses of masonry in the retaining walls of the Haram area, which are acknowledged by all to be Herodian, I found, for example, that the foundation course at the S.E. angle, where, in the words of the official report, the stones are as perfectly preserved "as if they had been recently cut," showed a uniform height of 3 feet 8 inches. Now as stones were no doubt cut, as bricks were made (*Mishna, Erubin* i, 3), in so many handbreadths, this yields 15 handbreadths, or $2\frac{1}{2}$ of a cubit of 17·6 inches *without a remainder*. From the courses of masonry I proceeded to test this result by the length of the eastern and western walls of the Haram itself, from the S.E. and S.W. angles, to the points at which it is now agreed they met the north wall in Herod's reconstruction. The distance on the survey map is, as nearly as may be, 1,173 feet, which is just 800 of a 17·6 inch cubit. I then had the curiosity to try the position of the several gateways. To my surprise, I confess, I found that the distance of the Double Gate in the South Wall from the S.W. angle, as measured by the surveyors, viz., 330 feet, is exactly 225 of the 17·6 cubit *without a fraction over*.

The original jambs of the Triple Gate were 400 cubits from the same angle, and 200 from the S.E. angle. On the west side of the Haram, we have Barclay's gate at 271 feet, or 185 cubits, from the S.W. angle, and the historic gateway at Wilson's arch at 586 feet, or 400 cubits, from the same point.

These measurements, I venture to think, speak for themselves. *The cubit of Herod's builders was a cubit of 17·6 inches (447 millimetres).*

There is evidence, moreover, that this same cubit was in use at a much earlier period. In excavating the earliest part of the south wall of the city, Dr. Bliss came upon some "most beautifully-set work" in the "remains of three courses, each 23½ inches high." This is exactly 8 handbreadths of a 17·6 cubit. Again, the sill of the ancient Valley Gate measured 8 feet 10 inches, otherwise 6 cubits (*Excavations at Jerusalem*, pp. 30, 19). These two monuments of the Hebrew monarchy, possibly even of Solomon's reign, therefore, show the earlier use of the Herodian cubit. The real length of the Siloam aqueduct by the same cubit works out at 1,194, as compared with the round 1,200 cubits of the inscription.

The following table shows the scale of the Hebrew measures on this valuation of the cubit:—

Digit	1					733 inches.
Palm	4	1				2·93 "
Span	12	3	1			8·8 "
Cubit	24	6	2	1		17·6 "
Reed	144	36	12	6	1	105·6 "

As to the origin of this cubit there can hardly be any doubt. It is the early Egyptian cubit of practically the same length which seems to have been displaced in Egypt itself by the longer, or "royal," cubit of seven handbreadths (20·63 inches).

Granted that the available evidence up to this point has revealed only one cubit of six handbreadths, in use from the monarchy to the first century A.D., is there evidence of another cubit—larger or smaller, as the case may be—in use alongside of it? First of all the later Jewish doctors and some modern writers speak of a cubit of five handbreadths, but, as it seems, on insufficient evidence. On the other hand, every previous writer on this subject, myself included, has told us of the cubit of seven handbreadths—the above-mentioned Egyptian "royal" cubit—introduced to us by the prophet Ezekiel (Ezekiel xl, 5, xliii, 13).

Well, I have already ventured on one metrological heresy in

this lecture; I am now going to risk another. After careful examination of the original text of Ezekiel xl, 5, I have been forced to the conclusion that it can only be rendered, as it is in all the ancient versions, Greek, Latin, and Syriac: "and in the man's hand (was) a measuring-rod, six cubits and a handbreadth," not as hitherto, "six cubits of a cubit and a handbreadth *each*," i.e., of seven handbreadths or 28 digits. But the present text is almost certainly corrupt, as the parallel passage, xliii, 13, is admitted to be. I can only conjecture that a line has fallen out, and for this reason. Elsewhere Ezekiel makes a point of defining the several values in the scales, both of weight and of capacity, which he employs (*see* xlv, 10-14); probably, therefore, the original text of xl, 5, ran thus: "and in the man's hand (was) a measuring-rod of six cubits by (the measure of) the cubit, and of 24 handbreadths by (the measure of) the handbreadth." This would at least be in agreement with the monumental evidence, for in my series of articles on Herod's temple (*Exp. Times*, xx, 182), I have shown that the court of Zerubbabel's temple was a square of which the side was 500 of the 17·6 cubit, which is precisely Ezekiel's specification (xlv, 2). For it is generally admitted that the second temple, in all probability, followed in this respect the directions of the prophet. On literary and archæological grounds, therefore, the case for Ezekiel's cubit of seven handbreadths (20·63 inches) falls to the ground, and with it the inference, based on II Chronicles iii, 3, that the temple of Solomon was built on the scale of this longer cubit of "the former measure."

Nevertheless, there is good evidence for the use in Palestine of such a cubit at a later date in the table of measures of length attributed to Julian of Ascalon (in Hultsch, *Metrol. Scriptor.* i, 200*f*, cf. *Encyc. Biblica*, iv, col. 5293*f*). The table is an excellent example of the metrological syncretism which we found in the latest Jewish weight system, showing how, about the second century of our era, the various standards of length, Roman, Greek, Jewish and Persian, were accommodated to each other. The Roman imperial mile of 1,000 double paces of 5 feet each, had long been reckoned as $8\frac{1}{2}$ Greek stadia, each of 600 feet. But in Palestine, as we know from the Talmud, the Persian measure, the *rîs*, called *stadion* by the Greeks, was in use. It was $\frac{1}{3\frac{1}{6}}$ of the parasang, of which the mile (Hebrew *mîl*, Greek *milion*, Matthew v, 41) was reckoned approximately as one-fourth, or $7\frac{1}{2}$ *rîs* (Mishna, *Yōma* vi, 4, 8). Julian gives us the subdivisions of the official Græco-Roman mile of $8\frac{1}{2}$ stadia, and of the popular Persian and Hebrew *mîl* of $7\frac{1}{2}$ stadia,

or rîs. In the equation of these disparate elements he introduces us explicitly or by implication to three different fathoms of 96, 100 and 112 digits respectively, implying cubits of 24, 25 and 28 digits. The existence of the first two is attested by the Mishna, which speaks of two cubit rods of 24 and 25 digits preserved in the precincts of the temple, that of 24 digits being described as "the cubit of Moses" (*Kelim* xvii, 9, 10). The third is the Persian cubit, originally the Egyptian "royal" cubit, of 20·7 inches or thereby, of which 3,000 went to the *mîl*.

Two provisional conclusions may be drawn from this hurried summary: (1) The introduction of the long cubit must be assigned to the Persian period of Jewish history, in which were introduced the Persian standards for gold and silver; (2) when we remember that it is in the books of Chronicles, Ezra, and Nehemiah—they are really subdivisions of a single work—that we meet with these Persian standards, is it not probable that the Chronicler, in saying that Solomon's temple was built by cubits of "the former measure" (*see above*), is referring to the natural cubit of 24 digits (17·6 inches) in contradistinction to the Persian official cubit of 7 handbreadths, or 28 digits?

Finally, in view of the wide diffusion of Babylonian influence in the earliest times in the West, including Syria and Palestine, the use in the latter countries of the Babylonian cubit is not at all improbable. Indeed, most recent German writers on the subject maintain that it is the original Hebrew cubit. They point to the recent discovery that the bricks of which the walls of Megiddo and Taanach are composed show parts or multiples of the Babylonian cubit of $19\frac{1}{2}$ inches, and claim for it that it is not only Ezekiel's supposed cubit of "a cubit and a handbreadth," but also "the former measure" of Solomon's temple (Benzinger, *Hebr. Archäol.*, ii, 190). But I trust I have succeeded in convincing you that the true Hebrew cubit in all periods was one of 17·6 inches (447 mm.), of whose Egyptian origin there can be no question.

III.—MEASURES OF CAPACITY.

The measures of capacity are the least satisfactory department of Hebrew metrology. The names and relative values of the several members of the scale, it is true, are known from the Old Testament (*see table below*), but we are still far from general agreement as to their absolute values in terms of our modern standards. This is due partly to the inconsistency of the literary evidence, and partly to the absence, until the other day, of any monumental evidence in the shape of actually

existing measures, by which to control the literary data. To do anything like justice, therefore, to this section would require much longer time than is now available. I must content myself with a few indications of the present state of our knowledge.

The unit of the Hebrew system was the log, the multiples of which were as follows :—

Ephah-bath.		Seah.		Hin.		Kab.		Log.
1	=	3	=	6	=	18	=	72
		1	=	2	=	6	=	24
				1	=	3	=	12
						1	=	4

Of these the ephah, seah and kab are mentioned in the Old Testament as dry measures; the bath (of the same capacity as the ephah), hin and log as liquid measures. Traces are also found of a probably older decimal system, which may be represented thus :—

1 homer or kōr	=	10 ephahs	=	100 omers.
		1 ephah	=	10 omers.

Our search for the absolute values of the above measures must begin with the evidence of Josephus, who repeatedly explains to his readers the value, in his day, of the Jewish measures in terms of the current Greek and Roman measures. This he does all but uniformly on the footing that the Hebrew unit, the log, is equivalent to the Attic xestes, itself the counterpart and namesake of the Roman sextarius; the ephah-bath of 72 logs is thus equated with the Greek metretes of 72 xestai, and similarly with the intermediate members.

Here, however, we are confronted with two difficulties: (1) these equations are at the best only popular approximations, for it is extremely improbable that the log was the exact measure of the sextarius-xestes; (2) there is considerable divergence of opinion among metrologists as to the exact value of the sextarius and xestes themselves. Our latest English authority (Flinders Petrie, art. WEIGHTS AND MEASURES, *Ency. Brit.*, 11th ed.) estimates the capacity of the sextarius at 34·4 cubic inches, just under an imperial pint (34·66 cubic inches); the xestes he would make a trifle higher, 35 cubic inches, or 1·009 of a pint. For all practical purposes we may safely take the sextarius-xestes as equal to our pint, which thus becomes provisionally our value for the log. From this as a basis the values of the higher members of the scale are easily calculated; the seah of 24 logs

is thus $1\frac{1}{2}$ pecks, the ephah of 72 logs is our bushel, while its companion liquid measure, the bath, is 9 gallons. We must remember, however, that the higher we go in the scale the less accurate are our approximations according as the log differed less or more from our standard pint.

But even with this caution, there is considerable evidence, including a passage in Josephus' own writings (*Ant.* III, xv, 3, as emended by Hultsch), to the effect that the Hebrew measures were, originally at least, somewhat smaller than the popular estimates just given. Thus it is probable that the ephah-bath originally did not exceed 64 to 66 pints, a conclusion confirmed by the statement in the Mishna (*Menakhoth* vii, 1), that "5 Jerusalem seahs are equal to 6 wilderness seahs," i.e., the seah-measure of Mosaic times, pointing to a later increase of $\frac{1}{5}$ or 20 per cent. (For details see *H.D.B.* iv, 910 ff.)

In the early writers on metrology, such as Epiphanius, there are several references to the Hebrew measures, but these are sometimes contradictory, at other times too indefinite, owing to our ignorance of which of the numerous modii, medimni, etc., they are using in their comparisons. Thus, in a recent essay in *Klio* xiv (1914), pp. 357 ff., Professor Lehmann-Haupt, starting from one of Epiphanius' notices, reaches a value for the seah of $27\frac{1}{2}$ xestai, which, since he takes the xestes at .96 pint, is 26.4 pints. This raises the ephah-bath of 3 seahs to 45 litres or 79.2 pints. Another German metrologist, O. Viedebannt, who has made a special study of ancient measures of capacity, reaches quite different conclusions (see art. HIN in Pauly-Wissowa, *Real-encyclopädie*, etc., 1913, and several papers in *Hermes*, 47, 1912). The fact that one can hardly find two metrologists agreeing in their estimates of the Hebrew measures proves conclusively, to my mind, the inadequacy of literary evidence, even when combined, as with Viedebannt, with brilliant speculations in comparative metrology, to solve the problem without the aid of monumental evidence in the shape of actual measures.

Now such evidence, though not so precise as one could have wished, is at last available. At various intervals in the last twenty-five years or thereby, stone vessels, apparently intended as measures of capacity, have been discovered by the Assumptionist Fathers in Jerusalem. A full account of them is given by the learned Père Germer-Durand in a lecture published, with illustrations, in a small volume entitled *Conférences de Saint Étienne*, 1909-1910 (Paris, Victor Lecoffre).

The measures in question belong to two distinct sets, one of

four larger vessels, and another of eleven smaller measures, the latter apparently all fractions or multiples of the omer. I shall confine myself to the larger set as more useful for our purpose. The four larger stone measures evidently stand in a definite relation to each other, represented by $1 : \frac{3}{4} : \frac{1}{2} : \frac{1}{4}$. The largest of the set is said to contain 21·25 litres, or 37·4 pints, which I take to represent one-half of the ephah-bath (not the whole measure as Germer-Durand supposes, see *Exp. Times*, xxiv (1913), p. 293 ff.). Assuming that the capacity is correctly given, we get a new value for the ephah-bath of 42·5 litres or 74·83 pints, which yields a log of 1·04 pint. This is very near Petrie's valuation of the Attic xestes as 1·01 pint (*see above*).

It is, of course, inadmissible to draw too definite conclusions from a single set of measures. Moreover, it is extremely disappointing, in the interests of scientific accuracy, that the actual capacity of each of the four vessels has not been published, in which case we should have been able to strike an average which might have modified to some extent the equation based on the largest vessel alone. Still we should be grateful for this, the first, opportunity of controlling the literary by monumental evidence. So far as the latter goes, it accords with Josephus' testimony to the practical equality of the Jewish and Græco-Roman measures in the last years of the Jewish state. For similar evidence as to the earlier periods of Hebrew history we may wait in hope, taking as our motto: *dies in diem docet*.

I append a table showing the comparative values of the Hebrew measures in terms of Josephus' equation of the log with the sextarius, estimated at one pint, and of the new Jerusalem measures (the numbers in parentheses are the number of logs in each member).

HEBREW MEASURES OF CAPACITY.

				Value in pints.	
				(a)	(b)
				According to Josephus.	The Jerusalem measures.
Log	...	...	...	1	1·04
Kab (4)	...	...	...	4	4·16
Omer (7 $\frac{1}{5}$)	...	...	...	7 $\frac{1}{5}$	7·48
Hin (12)	...	...	...	12	12·47
Seah (24)	...	...	...	24	24·94
Ephah- Bath	}	(72)	...	72	74·83
Homer (720)				720	748·3

DISCUSSION.

The CHAIRMAN said: The learned and instructive paper to which we have just heard, deals with a subject of a very special and technical nature. There may be some present who will be prepared to criticise the methods and discuss the results laid before us. For my own part, I do not feel myself competent to do so, and can only accept Professor Kennedy's conclusions on his authority.

But though the subject is a special and technical one, it is not without bearings of very general interest to all of us. In the narratives of the Bible it not unfrequently happens that what the critics call the "historicity" or "unhistoric character" of the narrative is made to depend upon the correspondence of ascertained facts with those described in the narrative. If we can be certain what the weights, measures, coins, etc., actually represent, we are able to apply this test. Such evidence is also of value sometimes as to the authenticity of a narrative. If we can ascertain whether facts of this nature (coins, measures or weights) actually correspond with the facts, we have a good deal of ground for inferring that the narrative was written by someone personally acquainted with the conditions existing at the time to which the narrative relates.

The subject matter of Professor Kennedy's paper lies, therefore, at the base of many enquiries of great interest. It happens fairly often that cobwebs of criticism have to be swept away because they rest on no ascertained and positive knowledge; it is a great advantage to have such clear and definite facts as have been placed before us, and we owe Professor Kennedy an additional debt of gratitude for having so plainly told us where the evidence available was good and sufficient, and where it was only sufficient to produce varying degrees of probability.

The Professor has spoken of "a bewildering variety of standards" in use in Palestine. The phrase is most applicable to the conditions which prevailed not long ago in Southern India, where every district had its own measures, and to enhance the difficulty of comparison, these different measures, etc., often went by the same name. One source of difficulty in comparing different measures there arose from the fact that they were sometimes "struck" and sometimes "heaped." A "struck" measure is one in which the grain or flour contained in the measure is rendered level with the top of the measure by drawing the hand or anything flat over the

surface ; a "heaped" measure is one in which the surface of the grain is heaped up as high as it will stand.

Naturally the grain-dealers preferred to buy by the one and sell by the other measure. It will also be seen that if the measure was (as generally happens) cylindrical in shape, the greater or less the diameter of the top of the measure, the greater or less would be the conical heap which stood on the top and formed the difference between the "struck" and the "heaped" measure.

It would be interesting to know whether the evidence available showed any trace of a corresponding difference in Bible times.

Professor KENNEDY replied that this source of uncertainty in both aspects was found to exist. Thus the "heaped seah" or peck was estimated to contain a quarter more than the "straked seah."

Mr. M. L. ROUSE said that here in England owing to the uncertainty attaching to selling dry goods by measures of capacity, we sold them, as a rule, by weight instead.

With regard to the length of the cubit of Ezekiel xl, was there not evidence from chapter xli, 8, that a longer cubit than ordinary was referred to, because it speaks there of a "full reed of six *great* cubits"?

Colonel M. A. ALVES: Regarding measures of capacity I am unable to speak ; so I merely observe that as, in the Wilderness, each person's daily allowance of manna was an omer, seven pints seems to have been a very good allowance.

As to weights, it may be noted that, whilst in Ezekiel xlv, 12, as in the Pentateuch, the weight of the shekel is stated to be 20 *gerahs*, the special "sanctuary" shekel is alluded to in the Pentateuch alone. The "king's" shekel is also mentioned in II Samuel xiv, 26.

Ezekiel xxxvi to xlviii are still unfulfilled prophecy ; it would seem, therefore, as if some clue to the shekel and *gerah* was existing somewhere, though perhaps not as yet brought to light.

As with his shekel, Ezekiel's cubit is still future ; and as, *see* Matthew xxiv, 1-2, every stone of Herod's Temple has to be thrown down, there will be nothing in it to act as a standard.

As the new sanctuary shekel is to weigh the same as the old, it would seem reasonable to suppose that the new sanctuary cubit should measure the same as the old which the Children of Israel brought with them out of Egypt.

Whatever its derivation, may not the word "ʾāmmāh" have as

wide a meaning as the word "ell," which varied from 27 to 54 inches?

The LECTURER replied that in Ezekiel xl, 5, the Vulgate gave the same rendering as the Septuagint: "a reed of six cubits and a handbreadth." In the present Hebrew text the word "cubit" was used with two different values side by side.

In the disputed passage, it had been his wish not so much to solve the problem which the passage presented, as to point out that there was a problem. As regards the expression in Ezekiel xli, 8, in our Authorized Version, "great cubit," the word in the original could not mean "great"; the real meaning was unknown (*cf.* margin of Revised Version, "six cubits to the joining"). The most difficult book in the Bible from a textual point of view was the book of Ezekiel.

The CHAIRMAN then proposed a hearty vote of thanks to Professor Kennedy for his most valuable and informing lecture, and this was passed by acclamation.

The Meeting adjourned at 6 p.m.

NOTE.—The Lecturer desires to express his grateful acknowledgment of the courtesy of the Committee of the Palestine Exploration Fund in permitting the use of their blocks to illustrate certain of the weights referred to in the Lecture.

571ST ORDINARY GENERAL MEETING,

HELD IN COMMITTEE ROOM B, THE CENTRAL HALL,
WESTMINSTER, ON MONDAY, JUNE 7TH, 1915,
AT 4.30 P.M.

PROFESSOR A. H. SAYCE, D.LITT., LL.D., D.D., TOOK THE CHAIR.

The Minutes of the preceding Meeting were read and confirmed.

The CHAIRMAN said that Dr. Pinches needed no introduction to the Members of the Victoria Institute, as he had favoured them with important addresses on several occasions. He would therefore ask him to read his paper on the Old and New Versions of the Babylonian Creation and Flood Stories.

*THE OLD AND NEW VERSIONS OF THE BABYLONIAN
CREATION AND FLOOD STORIES.*—By THEOPHILUS
G. PINCHES, LL.D., M.R.A.S.

FORTY years have passed since the late George Smith published his *Chaldean Account of Genesis*, dedicated to Sir Henry Rawlinson, the great English pioneer of Assyriology. We all remember, or at least realize, what a sensation Smith's discoveries made, especially the account of the Flood, which traversed the same ground, point by point, as the Hebrew version in Genesis. It was a triumph for our self-taught countryman, and we all know, moreover, to what it led—namely, the despatch of the enterprising Museum-official to the East, first for the *Daily Telegraph*, and later for the trustees of the British Museum. He was favoured with a fair amount of success, for he found a fragment which was at first supposed to fill a gap of the eleventh tablet of the Gilgameš-series, which gives the story of the Flood—in reality it was a portion of another version—as well as fragments of Creation-stories. His third and last trip to the nearer East, however, had fatal results, and he never saw his native land again. He had acquired, nevertheless, a large amount of chronological material, and Biblical scholars are his debtors for that as much as for his acquisitions in the realm of Babylonian tradition.

Though the two legends which Smith discovered were written in Semitic Babylonian—now known to be Akkadian—it was clear to all, from the names of the deities and other personages, that they were of non-Semitic or Sumerian origin. The Creation-series, which seems to have been written on six tablets, later increased to seven, recorded how everything was at first created and brought forth by Tiawath, “the sea,” and Apsû, “the Deep” or “Ocean.” From these came an only son, named Mummu. Other primeval deities, however, were later regarded as the children of Tiawath—Lahmu and Lahamu : Anšar and Kišar, the host of heaven and the host of earth; and then came Anu, the god of the heavens (with, it may be supposed, his spouse Anatum). At this point the record breaks off, but Damascius supplies the wanting portion, namely, the information that the successors of Anu were Illinos (cuneiform Illila) and Aos (*i.e.*, Ea or Aa). Of Illila, the god of the earth, the spouse was called Ninlila : and the spouse of Ea or Aa is given by Damascius as Dauke, the Dam-kina of the inscriptions. “And of Aos and Dauke,” adds Damascius, “was born a son called Belos, who, they say, is the fabricator of the world—the Creator.”

After this period, hostility arose between the gods of the heavens on the one side, and Tiawath, Apsû, and Mummu on the other. On Apsû complaining that he had no peace by day or rest by night on account of the ways of the gods, their sons, they at last decided to make war upon them. The preparations for this are told at great length, and news of the plot at last reached heaven. At first it was thought that the power of Anu would be sufficient to allay Tiawath's rage, but when he tried to subdue her, he failed, and turned back. After this Nudimmud, a deity identified with Aa or Ea, sallied forth to overcome the monster, but with equal want of success. Finally Merodach, the son of Aa, was asked to be the champion of the gods, and having accepted, made a long preparation, and overcame her with the aid of his own miraculous powers and those conferred upon him by “the gods of his fathers.” Having divided her body into two parts, and placed one of these as a covering for the heavens (“the waters above the firmament”), he imprisoned her followers. The spoils which he took were the Tablets of Fate held by Kingu, Tiawath's husband. With their aid, and supported by the gods who had helped him, he began to order the world anew, and decide the Fates. First of all he made a glorious abode for his father Nudimmud, built the palace Ê-šarra, “house of the host,” a name designating the heavens, and finally constructed the strongholds of Anu, Bel, and Aa. Then came the ordering of

the stars, the planets, and the moon to rule the night, with its sabbath-rest in the middle of the month. The sixth tablet records the creation of man with the help of Merodach's own blood, but there is much that is wanting at this point, and it is probable that numerous other acts of creation on his part will be found recorded when we have the legend complete. The seventh tablet contains a list of the glorious names conferred upon him. Many of these are of a mystic nature, and one seems to refer to the creation of mankind as having for its object the redemption of the rebellious followers of Tiauwath.

Such is, in short, an outline of this remarkable composition—a composition full of poetry, if we could only translate it worthily, like the Hebrew Bible or the classics of Greece and Rome. It is a legend complete in itself, intended, apparently, to teach definite doctrines—the twofold principle of the universe; the origin of the gods, by evolution, from that chaotic twofold principle; its defeat, in the person of Tiauwath, Kingu, and their followers, by Merodach, their descendant; the ordering of the world and the creation of mankind to be the “redeemers,” so to say, of the rebellious gods; and the reign of Merodach evermore as king of the gods and divine head of the Babylonian people—even as Yahwah was the heavenly king of Israel. Whether the monotheistic idea is intended in the seventh tablet, or not, is uncertain, but it may be noted that the giving of their names, by the gods, to Merodach, identified them with him, and it is in this way that they became his manifestations, as indicated by the tablet published by me in the *Journal of this Institute*, in 1895.

Another story of the Creation, unfortunately incomplete, is a comparatively short one; but that, too, has for its theme the glorification of Merodach. This is the now well-known bilingual version, prefixed to an incantation for the purification and hallowing of the great temple of Nebo at Borsippa—Ê-zida, “the everlasting house.” This does not describe the creation of the heavens and the earth, and has no mention of Tiauwath and Apsû as personages, but simply states that (in the beginning) nothing existed—neither the glorious house of the gods (the heavens), nor a plant, nor a tree, nor a brick, nor a beam, nor a house, nor a city, nor a community. Niffer and its temple, Erech and its temple, the Abyss and the sacred city Êridu, had not been constructed, but

The whole of the lands were sea.

When, however, movement came into that sea, Êridu and

É-sagila, "the house of head-raising" within the Abyss, and Babylon with the É-sagila there, were built and completed, and the gods and the Anunnaki, or spirits of the great waters, were created. Merodach then dammed back the waters and made a foundation—the tract wherein Babylonia lay, that the gods might dwell in a pleasant place—the land of their temples and their worship.

Then, as the most important thing, he made mankind, and the goddess Anuru—the "mother-goddess," whom we shall meet with farther on under various names—made the seed of mankind with him. He made likewise the beasts of the field and the living creatures of the desert, and he set the Tigris and the Euphrates in their place—"Well proclaimed be their name." After this he produced the plants, the verdure of the plain: lands, marsh, thicket, cattle, plantations and forests: and wild animals, typified by the wild goats. Lastly he made everything which had not yet been brought into being—the plant and the tree: the brick and the beam: the house, the city, and the community: Niffer, Erech, and their temples.

Here the text breaks off, which is exceedingly unfortunate, as we should all like to know how this story of the Creation formed the introduction to the incantation of which the end is given on the reverse. Were it complete, there is every probability that we should see the plan upon which it was written, and the principle underlying it. Naturally it is less important than the longer Semitic story of the Creation, the more especially so in that its great value lay, seemingly, in the magic power attached to the story, to its words, and its phraseology. But perhaps many would regard it as more important on this account.

Coming to the best-known Flood-story—that first translated by the late George Smith, we find here something so wonderfully like that given in the sixth and two following chapters of Genesis, that we recognize at once the identity of the two accounts, notwithstanding their many variations. Let us go over the main features of this narrative.

The hero Gilgames, king of Erech, had lost Enki-du, his dear friend and companion, and desired to bring him back from the abode of the dead. To all appearance, moreover, Gilgames was suffering from some dire malady, for which he wished to find a cure. In his wanderings, he reaches the place where dwelt Ut-napistim, otherwise Athra-hasis, the Babylonian Noah, who had attained to immortality, like the Biblical Enoch, without passing the gates of death. Gilgames asks Ut-napistim how he

had attained life in the assembly of the gods. In reply, Ut-napištim relates to him the story of the Flood.

It was in the city of Šurippak, an old foundation, that the gods decided to bring about this catastrophe. The gods in question were Anu, Ellila, Ninip, and En-nu-gi. Nin-igi-azaga, "the bright-eyed lord," came to know of it, and communicated the gods' decision to the earth and to the Babylonian Noah himself. The "lord of the bright Eye," who is none other than the god Ea, tells him to build a ship, and convey therein all the seed of life. In answer to enquiries, he was to say that he quitted the country because the god Ellila hated him, and he could not dwell in that land—he was going down to the Abyss to take up his abode with Ēa or Aa, his lord.

The ship having been built and provisioned, Ut-napištim took into it all he possessed, with the seed of life, his family, and his relations. To these were added the beasts of the field, and apparently the artificers who had helped him to build the ship. After the sun-god had fixed the time, the navigation of the ship was given into the hands of Buzur-Amurri, the pilot.

Then came the storm, with thunder and lightning, and great darkness, so that people could not see each other. Hadad's destruction, which reached to heaven, terrified even the gods. The goddesses, however, were filled, seemingly, with pity, for Ištar spake "like a mother," or, as the variant says, "with loud voice"; and the "lady of the gods," the mother-goddess Maḥ, called out, making her voice resound, probably in lamentation. When she consented to the destruction of her people—such, apparently, is what is meant by the goddess having "spoken evil" in the Assembly of the gods—she spoke of their destruction in battle, not in the raging waters, which destroyed all alike, and where, comparable with fishes, they filled the sea. For six days the storm raged, and on the seventh it ceased: the raging flood quieted down, and the sea shrank back. Opening his window, the light fell upon Ut-napištim's face, and he sank back dazzled, as it were, and sitting down, he wept, apparently at the destruction which had been wrought. The ship had been stopped by the mountain of Nišir, and there it remained for seven days. On that day he sent forth a dove, which, finding no resting-place, returned. A swallow was next sent out, with the same result. The third and last attempt to find out the state of the earth was made by sending forth a raven, and this bird, seeing the rushing of the waters, which left the land dry, ate, wading, and croaking joyfully at the contemplation of such a feast and the many others which

promised to follow it. Ut-napištim then sent forth to the four winds, and pouring out a libation, made an offering on the mountain-peak; and the gods, gathering like flies over the sacrificer, found gratification that divine service was held in their honour again. Then the mother-goddess Maḥ came, and raising the "great signets"* which Anu had made for her, swore by the lapis-stone of her neck that she would not forget these days. All the gods were to come to the sacrifice except Ellila, who had made a flood, and consigned her people to destruction. Ellila, however, when he came, was angry that mankind had escaped total destruction, but Ea argues with him, reproaching him with having sent the flood without due consideration. If it were needful to punish mankind, let it be by wild animals (the lion and the hyæna), by famine, or by the god Ura (pestilence). As for himself, he had not revealed to Atrahasis the decision of the great gods—he had caused him to see a dream, and the princely patriarch had thus gained knowledge of their decision. Then Ea went up into the ship, and led the patriarch up with his wife, and having touched them, he blessed them, saying: "Formerly Ut-napištim was a man—now let him and his wife be like unto us gods, and dwell afar at the mouths of the rivers." So Ut-napištim was taken and placed afar at the mouths of the rivers.

The patriarch, having completed his narrative, gives instructions for the restoration of Gilgameš' health, and how he might see the life—eternal life, it may be supposed, like that of Ut-napištim himself—which he sought.

Such is an outline of this interesting legend, the likeness of whose details with the account in Genesis has been recognized from the first. With regard to the variant versions of the story, there is no need for me to touch upon them here. As far as we know them, they are much too fragmentary to make analysis profitable. That of which a very small piece was discovered by George Smith at Kouyunjik, details the command to build and enter the ship, and Atrahasis' reply. This narrative is told, not in the first, but in the third person. A fragment of an archaic tablet with another version (apparently) was discovered and translated by Father V. Scheil some years ago, and now forms part of the Pierpont Morgan Collection; and a fragment of a fourth tablet, also archaic, was discovered by Professor Hilprecht, and described by me in the *Journal* of this Institute for 1911. This also gives the god's instructions for the

* Or perhaps, "rings," meaning the rainbow.

building of the ship, and is in the Semitic language of Babylonia. It is regarded as being, in the fragments of lines preserved, more like the Biblical version than any of the others.

THE NON-SEMITIC ACCOUNT OF THE CREATION AND THE FLOOD FROM NIFFER (identified with the Calneh of Genesis x, 9).

In April last year, I had the pleasure of giving an account of the new story of the Creation and the Flood, as outlined by Dr. Arno Poebel in the *Pennsylvania Museum Journal* for June, 1913 (see the *Journal* of this Institute for 1914, lecture read on April 14th). As the same scholar has now given, in the official publication of the Pennsylvania University Museum, the text of this document, with a full translation and very complete commentary, I am able to treat of the inscription much more satisfactorily.

The tablet is described as being 5½ inches (14·3 centimetres) wide by 7 inches (17·8 centimetres) high. About a third of the original text has been preserved to us. Each side has three columns, and as the existing portion is the lower part of the obverse and the upper part of the reverse, both the beginning and the end are wanting, as well as two-thirds of the matter between columns one and two, two and three, four and five, and five and six. It is thought that further fragments belonging to the text may ultimately be found, either at Philadelphia or at Constantinople, where other tablets of the same collection lie. Besides the wanting portions, there are several places where the text is defaced, but, as was to be expected in the case of such an important religious inscription, it has seemingly been very carefully written.

In the first column a goddess, either Nin-tu, the "lady of reproduction," or Nin-ḫursaga, "the lady of the mountain," speaks of the destruction of mankind, which she apparently wishes to discuss, as well as the question of her creation in general. The people, however, were seemingly to return to their settlements (*ki-ura-bi-ta*), and were to rebuild the cities (*uru-ki-me-a-bi ḫimindu*), and unite under their (the gods') protection. They were to lay the brickwork of (the gods') houses in a pure locality, and in such a place were the gods' vessels to be fashioned (?). The foundation-stones or bricks were to be "set aright" by fire, and the divine law was to be perfected therein. At this point comes the doubtful phrase *kia immabgu diga muningar*, and then we have the statement that Ana-Enlila, Enki, and the goddess Nin-ḫursaga had created the black-headed ones (mankind, especially the people

of Babylonia), had planted in the ground the root of the ground (a phrase not altogether certain in the original), and then the gods had called into existence suitably the four-limbed beasts of the field.

Notwithstanding the fact that we have here several doubtful phrases—and such are always to be expected in the present state of our knowledge—it must be admitted that, as far as it goes, this portion reads exceedingly well.

After this is a considerable gap, caused by the loss of the upper part of the second column (about two-thirds of its contents), and where it resumes the lines are unfortunately very defective.

Apparently some divine personage is still speaking, and there is a reference to looking upon someone—probably the creator of all things. This personage had created the insignia (apparently) of royalty, and also perfected the divine law; and it was seemingly he who proclaimed by their names five cities, allotting them to certain commanders (*kab-duga*). First on the list is the central city (so called, apparently, because regarded as the mid-point of the earth), Uru-duga or Éridu, which was given to the chieftain Nudimmud (the god Êa). The second was the *tunugira*, apparently the Dûr-Kis or “fortification of Kis,” which he gave. The third was Larak (Larancha), given to the god Papil-hursag. The fourth city was Zimbir (Sippar), given to Utu, the sun-god, patron of that divine site. Fifth and last comes Šuruppak, given to the god of that name, who seems also to have been called Sukurru. “These cities he proclaimed by their names, and appointed to a commander.” The next line, of which Poebel only translates the pronouns, seems to state that he (the deity) dug the watercourses, made plentiful the rains, and set (by this means) water therein. The last line of the column then states that he made the small rivers or canals, and their branches (?) by which they increased in volume.

This agrees with the bilingual account of the Creation in making the artificial constructions of Babylonia, such as cities and irrigation-channels (as distinct from the rivers), the creation of the gods.

The third column is, unfortunately, just as mutilated where it opens as the second, and about two-thirds of the text it contained are wanting. Poebel sees in the much-defaced opening lines references to “the people” and “a rainstorm,” suggesting the destruction of mankind by a flood. “At that time Nintu screamed like a woman in travail,” translates and completes the Editor—a completion evidently inspired by the corresponding passage in the story of the Flood first translated by George

Smith (see p. 305, above). Some such rendering as this is suggested by the more complete line which follows: "the holy Istar wailed on account of her people"—who were to be consigned to destruction. Enki, the god of the sea, now took counsel with himself, and they all—Anu, Enlil, Enki, and Nin-hursaga, the gods of heaven and earth, invoked the name of Ana-Enlila—apparently the compound deity so much in favour in Babylonia after the land had lost its independence.

At this point we have the first mention of Zi-û-suddu, the Babylonian Noah, and prototype, apparently, of the Ut-napištim of the Flood-story already outlined. As read by Poebel, this royal patriarch was an anointing-priest of the class or order called by the Akkadians (Semitic Babylonians) *pašišu*, and he is said to have made some object expressed by the characters *an-sag gur-gur* (or *nigin-nigin*, or *nigin* simply), and if this be the case, the words would probably indicate a great net, with which Zi-û-suddu hoped to save the drowning people. Then, in humility prostrating himself, daily and perseveringly standing (in reverence), by hitherto unexisting dreams, apparently, he forecasted the fate (of mankind), invoking the name of heaven and earth—for what reason does not appear, but his object may have been to stir the creators of the universe to action, so as to preserve the living creatures which they had produced.

Here the third column, which is that on the extreme right of the obverse, ends, and the fourth column (reverse) follows on immediately, without any other gap than a lost word or two at the end of its last line. The fourth column, however, is itself exceedingly defective and mutilated, and less than a third part remains, especially when we remember that the end of every line is wanting.

The following is an outline of the contents of this mutilated section:—

- "At the enclosure of the gods is a wall (?)
- Zi-û-suddu, standing at its side, heard
- "At the support on my left hand stand
- "At the support I will speak a word to thee
- "My hallowed one, thine ear (to me incline).
- "At our hands (?) a water-flood upon the mighty (?)
will be (sent),
- "To destroy the seed of mankind
- "The decision is the pronouncement of the assembly
[of the gods].
- The command of Ana-Ellilla
- His kingdom, his rule
- To him

Perhaps the translation in this column is in certain respects less doubtful than in the three preceding columns—in any case, the revelation of the coming of the Flood would seem to have been direct, and not made by a dream, as in the case of the version published by George Smith. The defective state of the record deprives us of the name of the person who revealed the coming catastrophe to Zi-û-suddu, but there is every probability that this was the god Éa or Enki, the lord of the ocean and of deep wisdom. As in the record already known, the gods in general consent to the destruction of mankind, but the actual command came from the combined deity. Ana-Enlila, who is designated Enlilla simply in G. Smith's version.

We now come to the central column of the reverse—col. 5—rather less than one-third of the whole. It describes the breaking of the storm, and is not without poetical merit:

“ All the powerful wind-storms as one rushed forth
 A water-flood over the [hostile] raged.
 After for 7 days and 7 nights
 The water-flood had raged over the land—
 After the mighty boat had been carried away by the wind-storms
 upon the swollen waters,
 Utu (the sun-god) came forth again, on heaven and earth making
 [day].
 Zi-û-suddu opened a window of the mighty boat—
 The hero Utu makes his light to enter within the mighty boat.
 Zi-û-suddu, being king,
 In the presence of Utu prostrated himself.
 The king sacrifices an ox, slaughters a sheep
 Whilst (?) . . . the great horn . . .
 . . . he . . . s for him.
 . . . filled it
 . . . doubled (?)
 . . .

Here we have again the incidents of the Flood-story translated by Smith—the rain-storm lasting seven days and seven nights, the sun shining after that length of time again into the ark, and Zi-û-suddu's sacrifice to the deity, though here it would seem to have taken place whilst still in the vessel, and not after he had come forth—unless two acts of sacrifice were recorded.

The sixth and last column occupies the left-hand portion of the reverse, and contains about fourteen lines—or twelve, if we take them in their poetical divisions. Where the text opens, to all appearance some divine person is speaking:—

"By the soul of heaven, by the soul of earth, ye shall conjure
that he may be well-disposed with you." [him

Ana-Enlilla conjured they by the soul of heaven and the soul of
and he was well-disposed with them. [earth

The root (?) growing from the earth they took up (?).

Zi-û-suddu being king,

Before Ana-Enlilla prostrated himself.

Life like a god he gives him—

Eternal life like a god he confers upon him.

Zi-û-suddu being king.

The name of the root (?) "seed of mankind" he called—

In another land, the land of Tilmun they made it

After they had made it live [live.

(On the left-hand edge is a somewhat defaced line in which the editor reads again the name of Zi-û-suddu, and from its position and the line which precedes it, it seems as though it ought to be inserted between lines 7 and 8, in which case its presence here would be due to an omission on the part of the scribe.)

This final fragment of the legend is of considerable interest on account of the light it throws on Babylonian beliefs. Here two beings are invoked—"the spirit (or soul) of heaven and of earth," and the context shows that the invocation was effective. The appropriateness of this will be recognized when we remember that Ana was the god of heaven and Enlila the god of the earth. The prime mover in bringing the Flood was, as we have seen, this combined deity, and the invocation of the appropriate spirits evidently brought about the desired effect. Moreover, the disposition of Ana-Enlila was so influenced that when Zi-û-suddu prostrated himself before him, that patriarch received eternal life like that of a god—in other words, he was deified. From the final imperfect lines we see that the "seed of mankind" was made to live again in the land of Tilmun—the southern portion of Babylonia, and the district regarded by them as being in a special way that of the Babylonian Paradise. We shall learn more about this sacred land of Tilmun in the second inscription from Nippur.

Judging from the style of the writing, the tablet probably belongs to the beginning of the second millennium B.C., but the date of the legend's composition was probably much earlier than this. The deities mentioned are Nin-tu or Nin-hursaga, the great mother-goddess; Ištar, the goddess of love, probably another form of the mother-goddess; Ana, the god of the heavens; Enlila, the god of the earth; and Enki, or Éa, the god of the sea. We may therefore conclude that the inscription belongs to the

period before the influence of the "merciful Merodach" attained its full force—in other words, before Babylon, Merodach's city, acquired its position as capital of the Babylonian confederated states. The reference to Dûr Kis and Zimbir (Sippar), however, shows that the northern states had already acquired prominence, though Babylon had seemingly not attained the renown of the other cities mentioned.

THE PHILADELPHIA TABLET REFERRED TO BY PROFESSOR LANGDON.

The very important Sumerian inscription whose nature was discovered by Professor Langdon, of Oxford, is a record of considerable length. When first described by the learned Assyriologist, only the lower part of the obverse and upper part of the reverse was known to him. After he left Philadelphia, however, the authorities at the University discovered and joined to the portion in question almost the whole of the remainder of the document, which, though much mutilated, adds considerably to its completeness. It will, therefore, be easily understood that Professor Langdon had to modify somewhat his first impressions of the legend which he had published.

The tablet, which is made of clay, seems to be about $4\frac{1}{2}$ inches wide by $6\frac{1}{2}$ high, and is inscribed on each side with three columns of somewhat archaic writing—six columns in all. When complete, the record probably bore a total of about 240 lines, so that it is a composition of considerable length. In his preliminary account of it, Professor Langdon describes it as a hymn to the goddess Nin-hursag, "the lady of the mountain"—probably some sacred spot in the Babylonian district or province of Tilmun. As the "mother-goddess," Nin-hursag was much venerated by the Babylonians and Assyrians, and the remnants of the first two columns apparently sing of her heroic deeds, "and the events which took place in her city Opis." The text chiefly treats, however, of the above-named holy place called Tilmun, on the Persian Gulf—which, it is to be noted, then extended much farther inland than now. The composition is in poetical form, and there is a great deal of repetition, but as the style is remarkably good, where we can make a satisfactory rendering, the text reads well.

[The land of Tilmun] is [glorious], where ye are—

[The land of Til]mun is glorious.

[The land of Tilmun is glorious], where ye are—

[The land of Ti]lmun is glorious.

Tilmun is glorious, Tilmun is pure—

Tilmun is bright, Tilmun shines exceedingly.
 Alone in Tilmun he took rest—
 Where Enki with his spouse took rest,
 That place is pure, that place shines exceedingly.
 Alone (in Tilmun he took rest—)
 Where Enki with Nin-ella (took rest),
 That place is pure, (that place shines exceedingly).
 In Tilmun the raven croaked not.
 The *turri*-bird the voice of the *turri*-bird uttered not.
 The lion slew not.
 The wolf plundered not the lambs.
 The dogs approached not the kids in repose.
 The boar devouring the grain did not
 He did not
 The bird of heaven his young forsook (?) not.
 The dove did not take to flight (?).
 As for the sore eye : " I am sore-eyed," one said not.
 As for the head-sick : " I am sick-headed " (mad ?), one said not.
 As for the old woman : " I am an old woman," one said not.
 As for the old man : " I am an old man," one said not.
 As for the maiden, one did not put her to shame in the city.
 " A man has changed a waterway," one said not.
 The prince withheld not his wisdom (?) (so Langdon).
 " A deceiver deceives," one said not (so Langdon).
 " The city-chief is a despot (?)," one said not.
 Nin-ella to her father Enki
 spake :
 " My city thou hast founded, my city thou hast founded, my
 fate thou hast set.
 " Tilmun, my city, thou hast founded, my city thou hast
 founded, my fate thou hast set."

This is practically the last complete line of the first column, which originally had eight or ten more, some of them at least of the same nature.

How much of allegory there may be in the substance of this first column is uncertain, but the purity, the glory, and the exceeding brightness attributed to the land of Tilmun is probably due to the fierce, dazzling sunshine of the summer months, during which, like Enki and his spouse, the great desire of the inhabitant of that holy place was to lie down and take rest. Here, again, we have Enki, "the lord of the land," who is generally identified with Ea, the god of the waters and the streams of Babylonia. In this double character—*i.e.*, as god of the land and of water too—he became one of the great creators of the living things in the world. As, in the 31st line

Nin-ella is said to speak to "her father Enki" (*aa-ni a-Enki*), there would seem to be no doubt as to their relationship in Babylonian mythology.

Noteworthy is the fact that everything was regarded as perfect in that glorious land. There were no unclean and slaughtering birds; and lions, wolves (or hyænas) and dogs kept themselves from ravaging and terrifying. There was no old age, and bodily defects were apparently wanting—for although the bodily ills specified are few, it is evident that a part only is put for the whole—there was no need to extend the list, as the listener would understand what was referred to. The epoch referred to was evidently a period in the history of Babylonia—or at least of the state of Tilmun—corresponding with the golden age of the ancient classics, and the parallel is rendered still stronger by the fact that Enki or Éa seems to be the Cronos of the Greeks, the Saturn of the Romans, in whose time the golden age existed.

Notwithstanding the perfection with regard to mankind and the animals, there were seemingly certain natural defects to be overcome, and these the goddess, apparently, proceeds to refer to in what seems to be the continuation of her speech, though it is more probably the answer of Enki assenting to the requests which Nin-ella had made:

"May thy city constantly drink abundant water—
 May Tilmun constantly drink abundant water.
 May thy well of bitter water like a well of sweet water flow.
 May thy city be the land's assembly-house—
 May Tilmun be the land's assembly-house.
 For the making of heat, Utu (the sungod) kindles (his) light—
 Utu and Anna (the heavens) together."

The next few lines are difficult and I do not venture to translate them from the half-tone reproduction which is alone available to me at present. Farther on the lines record the accomplishment of the deities' wishes at Tilmun—Tilmun constantly drank abundant water, the well of bitter water became sweet, the field produced grain, the city became the land's assembly-house, and Utu kindles his light to make heat.

After this there are several rather complete lines, practically translatable, but they do not make very good sense, so I omit them. Then comes a reference to the invoking of the spirit of heaven, followed by an announcement concerning the destruction of a field and the sending of an inundation. The following

is a rendering of these lines, which are among the most important in the text:—

Enki the (water-god) in the house of Damgal-nunna uttered the word.

“Of Nin-hursagga one has destroyed the field—
To the field I will give life,” Enki declared.

Or, perhaps better :

Enki in the house of Damgal-nunna announced :

“I have destroyed the field of Nin-hursagga.
To the field she will give life,” Enki declared.

The day was 1, its month 1 :

The day was 2, its month 2 :

The day was 3, its month 3 :

The day was 4, its month 4 :

The day was 5, its month 5 :

The day was 6, its month 6 :

The day was 7, its month 7 :

The day was 8, its month 8 :

The day was 9, its month 9—the month of the periodical offering.

Here come three lines of which the beginnings are wanting, and the renderings of these are therefore somewhat uncertain. Professor Langdon translates them as follows:—

Like fat, like fat, like tallow,
Nin-tud, the mother of the land,
Had created them.

Bizarre as the rendering seems to be, there is no doubt that it is correct in the main, but I am inclined to think that there are three gaps—there are certainly two—and I would translate what remains somewhat as follows:—

Like fat, like fat, like the fat of cream (? butter),
 the mother of the land,

 produced.*

What this refers to is uncertain, but Langdon suggests that it is a simile comparing the dissolution of living things to melted

* [Zal-li-] dim zal-li-dim zal hi-nun-na-dim
 ama kalama — ka

 -in — tu — ud

fat. But anything which floats on the surface of the water, like grease, would suit the passage. If Langdon be right in restoring the name of the goddess Nin-tu(d), man would naturally be intended.

The next column is the third—the extreme right-hand column, which, when one has to work from a photograph, is always unsatisfactory, as the characters at the end, in the case of the longer lines, are almost certain to be written “round the corner,”—*i.e.*, on the right-hand edge. This portion seemingly refers to certain goddesses who, on being appealed to, said or represented themselves as not being wroth with the seed of the pious, or words to that effect. The first was Nin-sar, or Nin-mu (“the lady of growing things”), and the statement was made twice, apparently through her messenger. After this we have the words :

“My king reverently approached (?),
His foot alone on the ship he set (?).”

Here come two lines which are too difficult to translate :

Enki had devastated the field—
“to the field she will give life,” Enki announced.

The day was 1, its month 1 :
The day was 2, its month 2 :
The day was 9, its month 9.

And after this we have again the lines apparently comparing the floating corpses to fat or butter (?) on the water.

One or two uncertain lines follow, and then the same words come again, coupled with the name of the goddess Nin-kurra, “the lady of the mountain.” This, too, has the reference to days 1 to 9, with their corresponding months, followed by the comparison with fat. After this is a line with a reference to Nin-kurra, but in what connection does not appear. According to Langdon’s rendering of the line which follows, she reveals secrets “to the divine Tagtug.” In the next line, another goddess, Nin-turi, speaks to him somewhat as follows :

“Verily, I will declare thy purity my purity . . .
I will tell thee, and my words . . .
O thou lone man, for me [he has reckoned these]—
Enki for me [has reckoned these, yea has reckoned these].”

Traces of one line follow this.

It is difficult to see how this legend can be a story of the

Flood like the account we find in Genesis and in the 11th tablet of the Gilgamesh-series. Judging from the recurrence of the period of nine months, represented, to all appearance, by nine days or periods, it would seem as though three Floods were referred to, though it must be admitted that one and the same catastrophe only may be intended. With regard to the "divine Tagtug,"* he would seem to correspond with the Biblical Noah, called Ut-napištim and Athra-hasis in the other Babylonian legends.

With this we reach the end of the obverse, which is followed by a damaged and illegible portion. Where the text is again readable, we have, as Professor Langdon describes it, a reference to Tagtug and his two pilots tending a garden. The watercourses therein—*c* and *pa* = *iku* and *palgu* (the latter the Hebrew *peleg* or "brook")—words commonly met with in Babylonian inscriptions referring to agriculture—meet us, and naturally stamp the narrative characteristically. They build a temple for Enki and irrigate the barren land. "The primæval paradise has been lost, the earth has become barren, and consequently man must toil." He notes that in the Biblical account of the Flood there is an exact parallel, for Noah, too, becomes a gardener, or, rather, an orchard-keeper. We gather this from the fact that Noah planted a vine. After this God communed with him, and gave him power over the living creatures of the earth similar to the authority conferred upon Adam. According to the learned discoverer of the text, "we have something parallel to this in our tablet, for now Enki summons Tagtug the gardener to the temple which he had built:—

Enki beheld him, a sceptre in his hand he grasped.

Enki for Tagtug waited.

At his temple he cried 'Open the door, open the door—

Who is it that thou art?'

'I am a gardener joyful

' †I will give unto thee.'

The divine Tagtug with glad heart opened the temple's door.

Enki unto the divine Tagtug *revealed secrets*.

His he gave unto him gladly.‡

* Naturally, the question arises whether the name is rightly read. For *tag* we might substitute *šum*, and for *kug*, *ku* or *dur*. If he was "the institutor of sacrifice," his name should be *Šum-ku*, or, as the "intelligent sacrificer," we might transcribe *Šum-tug*. Other readings are also possible.

† . . . -*mašku šu kurkurra*.

‡ Gladly his offering (?) unto him he presented.

In Ê-bara-gu-du-du he gave unto him :
 In Ê-[rab]-ga-ra-an he gave unto him.
 The divine Tagtug was entrusted. The left hand he raised :
 the *right* hand he folded (on his waist)."

It is unfortunate that Professor Langdon's proof went down with the *Lusitania*, as, through his kind offer, I might have been able to verify some of these lines. As it is, I can only suggest that the 9th line may refer rather to Tagtug than to the god Enki, and that the missing word is "offering," or something similar. He finds in them, however, a real parallel with the priestly narrative in Genesis.

The above lines form the end of the fourth column, the first of the reverse, and after that the text is defective, the number of lines wanting or exceedingly mutilated being about 16. At this point, however, "we come to the real fall of man according to the doctrines of Nippur." The tablet, Professor Langdon goes on to point out, gives a list of the plants which grew in the garden (their names, at least in part, were in the 16 lines which are lacking). The text here reads as follows, but it is right to state that my rendering differs somewhat from that of the learned professor :—

"Her herald, the divine Isimu, returned to her :
 As for the plants, their fate I have decided—
 Something it is—something it is."*
 Her herald Isimu returned to her :
 "My king concerning the woody-plants has commanded—
 He may cut them—he shall cut.
 My king concerning the . . . -plants has commanded :
 He may pluck them, he shall eat.
 My king concerning the *maš-* . . . -*an* (?) has commanded :
 He may cut them, he shall eat.
 My king concerning the *u-a-pa-sar* commanded :
 He may pluck it, he shall eat.
 My king concerning the herb of the mountains commanded :
 He may pluck it, he shall eat."

Here the text again practically breaks off, but four lines of the same nature, and with the same repetition, must have followed. According to Professor Langdon, the instructions refer to seven classes of plants—the sacred number, which was so popular, and which exercised so much influence on the minds

* "It is such and such, such and such."

of the Babylonians, whether Sumerians or Akkadians, from exceedingly early times. In consequence of the change in the phraseology, Professor Langdon infers that man was forbidden to eat of the plant or plants which had not been included in these seven classes. As far as preserved, the lines following these do not seem to differ in sense—it is the same formula which they contain, practically—but the author of the paper which I quote, and who has seen the original text, translates as follows :—

“ [My king] the cassia plant approached,
 He plucked, he ate.
 . . . the plant, its fate she had determined ; therein she
 came upon it.
 Nin-hursag in the name of Enki uttered a curse.
 ‘ The face of life until he dies shall he not see.’
 The Annunnaki in the dust sat down (to weep).—
 Angrily to Enlila she spoke :
 ‘ I, Nin-hursag, begat thee children, and what is my reward ?’
 Enlila the begetter angrily replied :
 ‘ Thou, Nin-hursag, hast begotten children, and
 “ In thy city two creatures I will make for thee,” shall thy name
 be called.’ ”

It is difficult to follow the sequence of these lines, which, although I have verified them as far as is possible upon a half-tone reproduction, apparently leave something to be desired. The following, however, is apparently the explanation in fewer words and in plainer English. For “ my king ” we may read Tag-tug, who, in the above rendering, approaches and eats the *amharu*-plant, identified by Professor Langdon with the cassia. Upon this plant, however, Nin-hursag (or the god Enki) had placed a certain fate, namely, that it was not to be touched by man and used as food. Nin-hursag, therefore, in the name of Enki, the god of the fertilizing waters, uttered a curse, and announced that he, Tagtug, or mankind in general, which he seems to have represented, should not see life—that is, real life—until after death. Why Nin-hursag vents her anger upon the god Enlil, “ the older Bel,” is not clear, and one does not see any anger in his answer. I suspect a misreading somewhere, but perhaps Enlil was the instigator of the temptation.

Commenting upon this passage, Professor Langdon corrects his previous opinion. He points out that here there is no question of a tree of life or of knowledge. It is simply the cassia plant which is referred to and the prohibition to eat it

was simply to test Tagtug's obedience. The disaster resulting therefrom, in his opinion, was a later and popular development.

And this leads him to speak of the possible connection of this seeming temptation-legend with the third chapter of Genesis. I quote here his words:—

“This was the form which this doctrine took in the minds of the ancient Hebrew teachers who wrote Genesis iii. The mother goddess here becomes the wife of Adam, who tempts him to eat. Now, we know that in Sumerian religion this mother goddess, Nintud, like the major type of mother goddess Innini, was connected with serpent worship from most primitive times. In other words, the idea developed that a serpent deity had tempted man. Moreover, we long since knew that Eve, who created Cain with the aid of Jahweh, is really an old Canaanitish serpent deity. When the Hebrews made her into Adam's wife, the serpent tradition was naturally separated from her; under the influence of the Sumerian tradition that a serpent goddess had tempted man they fashioned the legend to read that a serpent tempted the wife, who in turn tempted man.”

I cannot say that I am in a position to follow the learned Oxford professor, and comment upon the above theory would carry me too far. That Eve, “the mother of all living,” may have a Sumerian name, *i.e.*, Hawwah, from (*H*)awa, “mother,” the Greek Eve (*Eῡa*, accusative), is not by any means improbable, but the idea of a serpent-goddess might just as well have been developed from that of Eve and the serpent as the latter from the former.

The inscription completes the doctrine regarding the origin of man's present state, says Professor Langdon, by describing how Nin-hursag provided eight divine patrons of civilization to aid humanity in their hard lot. She had produced or created or brought forth for him Ab-u, the master over or protector of the pastures (herbs, etc.); Nin-tulla, patroness of farming; Nin-ka-utu, the lady directing birth; Nin-ka-si, also called Siris, apparently a goddess of herbs and the drinks made therefrom; Na-zi, of doubtful character, but perhaps “protector of life,” or the like; Da-zi-im-a or Da-zi-ni-a, also doubtful, but perhaps having to do with the sending of rain; Nin-ti, a goddess identified with Dam-kina, the spouse of Enki or Ea—Langdon calls her simply a patroness of women; and En-sag-me, apparently meaning “lord of what is good and wise.”

As a parallel to these, Professor Langdon quotes "the J. version of the Hebrew," which "describes how, after the expulsion from Eden there arose patrons of culture." These were Abel the shepherd, Cain the agriculturist, Enoch the founder of cities, Lamech, "whose name is identical with Lumbā,* the Sumerian title of Ea, as god of psalmody"; his three sons, Jabal, patron of Bedouin-life; Jubal, patron of music; and Tubal, patron of metal workers.

We must all admit the likeness there is here, but the differences are noteworthy. In Genesis, everything happens in a natural way—these pioneers of civilization—by the way, does Bedouin-life come under that heading?—being the descendants of Adam and Eve in the ordinary course of descent from their ancestors, whilst all the "patrons of civilization" in this new tablet are divine personages created or produced, apparently simultaneously, by the mother-goddess. It has long been my opinion that in any two accounts of the Creation—sensible accounts, worthy of being taken into consideration,—there are bound to be likenesses, even though composed quite independently, by people having no communication with each other. Every account of the Creation must speak of the formation of the heavens and the earth; the sun, the moon, and the stars; recognize the existence of land and water; treat of the creation of plants and trees; birds, beasts, and fishes; preceded or followed, as the case may be, by the formation of man—first in order if his importance be considered, last in order if the provision for his needs be the prominent thing in the composer's eyes. In like manner the arts and sciences must be referred to, and the chances are that polytheists will attribute their introduction in some way to their gods, as the Babylonians did, whilst monotheists will attribute them to famous and celebrated men, as in the case of the Hebrews.

In Professor Langdon's second paper, an account of the pre-Semitic version of the fall of man (*Proceedings of the Society of Biblical Archaeology*, November, 1914), he seems to regard the new tablet which he is publishing as a story of the Creation rather than of the Flood. It is true that a personage corresponding with Noah—the divinity whose name is read Tagtug—is referred to, and seems to go on board a ship or boat (*giš ma*), but it is doubtful whether this personage can be regarded as the same as the Ut-napišti^m or Athra-hasis of the Flood-story of the

* This is doubtful, the last radical being 𐤁, 𐤀, in Hebrew not 𐤁, 𐤀.

11th tablet of the Gilgamesh and other legends, or the Zi-û-suddu of the very interesting version published by Poebel. Whatever parallels with the Biblical account be found, we must, I think, regard Professor Langdon's version as a thing apart. Whether its completion—should that ever take place—will modify our views of it in this respect, is impossible to say. Though found at Nippur, it would seem to be the Creation-story of Tilmun, an old Babylonian state on the shores of the Persian Gulf, from whose waters, according to Berosus, the fish-gods of old came forth to teach the Babylonians the arts and crafts of their national life, of which they made such good use. Enki or Ea, who is mentioned so often in Professor Langdon's text, was the great Babylonian water-god—god of creation and most of those arts and crafts—does this new text refer in some way to one or more of the divine visits of which Berosus speaks?

DISCUSSION.

The CHAIRMAN said that he was sure that the Meeting would feel, with him, that they were deeply indebted to Dr. Pinches for his very interesting paper. The subject was one of the greatest importance, for the documents which Dr. Pinches had described in the latter portion of the paper were Sumerian, and came from the library of Nippur, which had been destroyed before the birth of Abraham. The documents, therefore, were themselves very old; they were not merely copies or reproductions of older records. They are written in a pre-Semitic language and so give us the myths and legends which lay behind the Semitic traditions. This enables us to understand how it is that some of the Semitic versions of a Babylonian legend differ considerably from others; some had been translated literally from the Sumerian; others had been paraphrased; and in some cases poems of considerable literary merit had been based upon such paraphrases. One such poem is the story of the Flood as given in the great Epic of Gilgamesh, which was written by Sin-liki-unnini, who lived in the Abrahamic age. Hence we find different versions of the stories of the Creation and the Flood. In this way the difference in the names assigned to the hero of the Flood-story can be explained; Berosus called him Xisuthros, which was equivalent to the Babylonian Hasis-Atra, or Atra-Hasis, which meant "the very wise," and it was an epithet applied to other antediluvian patriarchs besides the Babylonian Noah. The tablet discovered by Dr. Poebel,—who, it is stated,

has been killed in the war,—gives this name as Ziu-suddu. This corresponds with the Greek name assigned to the Flood hero by Lucian (in the “*De Dea Syria*”), and signifies “life of long days,” the Sumerian equivalent of the Semitic *Ut-napišti*. On the tablet deciphered by Dr. Langdon the name appears as Tag-tug, of which the Semitic equivalent is Nahum or Nuhum, that is Noah. As regards the translation of Dr. Langdon’s tablet, he felt that we ought to wait before concluding that we can have a final and complete translation of it. When we have to deal with mutilated Sumerian texts of which there is no Semitic translation, our renderings are necessarily open to some uncertainty.

On one point he could not agree with Dr. Langdon, namely, that the tablet which represented Tagtug as having eaten a plant which brought about a curse, was an account of the Fall, by which death entered the world. So far from Tagtug introducing death into the world, the hero of the Flood is described as himself becoming immortal.

The great interest of these Babylonian accounts of the Creation and the Flood lay in their relation to the corresponding accounts in the Book of Genesis. One main fact governed the Babylonian accounts of Creation: the world is described as having been developed out of the watery deep. And the reason for this was that the original Babylonia did thus rise out of the Persian Gulf. Eridu, which was now 100 miles inland, had originally been a port on the shore of the Persian Gulf, and the Babylonians had seen the land, as it were, growing up out of the sea; that is to say, the alluvial deposit from the Euphrates and Tigris stretched out further and further year by year into the Gulf, and broad fields were formed where previously the sea had rolled. This region, therefore, the Babylonians took to be the home of the Creator, and in all the Sumerian speculations as to the origin of things they assumed that the earth had emerged from the watery deep. If they turned to the opening verses of the first chapter of Genesis, they would find the same fundamental idea underlying them.

The fullest Babylonian account of the Flood forms the 11th book of the Epic of Gilgameš. It presents an extraordinary likeness to the account of the Flood which we possess in Genesis. And it is important to note that this likeness is not confined to the portion of the Genesis narrative which is ascribed to the Elohist on the one

hand, or to the Jahvist on the other, but extends to the whole narrative as we find it in the existing text of Genesis. The Babylonian Flood-story, therefore, which was written in the age of Abraham, already represented the same complete narrative as that which we now have in the book of Genesis. More important still, the narrative in Genesis bears evident traces of having passed from Babylon to Palestine. Thus the dove returned to the ark with a leaf plucked off in her bill, which is stated to have been an olive leaf; and while the olive is the typical tree of Palestine, there are no olive trees in Babylonia or Armenia. In the Babylonian account, again, the ark is a house-boat; the navigation of the Euphrates was carried on in such boats. But in Genesis, it is called a *tébáh*, which is an Egyptian word and signified the ark or boat in which the Egyptians carried the images of their gods in procession.

It is clear that if the literary analysts of Genesis are right, only one of two alternatives is possible:—Either the complete account in Genesis as we now have it must have been written in Babylonia in the time of Abraham; or the Elohist and Jahvist must themselves have been Babylonian writers of a still earlier age. And the analysts themselves will be the last to accept either alternative.

At all events one thing is clear. The writer of Genesis has persistently and deliberately altered the Babylonian narrative in one particular. From beginning to end he has set himself to contradict and deny the polytheism of Babylon, and the superstitions connected with it. The Babylonian ascribed the Flood to one god, the intercession for mankind to another, the scheme for the saving of mankind to a third. There are no separate gods in Genesis. The God Who sends the Flood is the same as He Who saves the remnant. In the Babylonian narrative, the door of the ark is closed by the hero himself; in Genesis it is God Who shuts him in.

In one or two points the Babylonian narrative explains that which was difficult in the narrative in Genesis. Thus there was something which appeared to be wrong in the account of the sending out of the birds: the dove is said to have been sent twice; why should it have been sent first of all before the raven, and why should it have returned to the ark the first time that it was sent out? When we turn to the Babylonian account, the explanation is clear: three birds were sent, first a dove, secondly a swallow, thirdly a raven; but the swallow, which was “the bird of destiny,” and thus connected with

Babylonian superstition, has been omitted from the narrative of Genesis.

Mr. ROUSE: Both the Bilingual Account of Creation and the Sumerian Account, now before us, have the curious statement that men and domestic animals were all created before any plants were made for them to feed upon—a statement in striking contrast with Genesis i, which tells us that all plants were made on the third day and all land animals on the sixth.

The inferiority of the Semitic Babylonian story of the Flood to the Biblical narrative is seen not only in its polytheism (with the divergent views of Bel and the other gods, and the undignified flight of the gods to “cower down like dogs in the heaven of Anu”), but also in its polygamy; since the good man takes into his ark for himself, not one wife alone but a number of slave-wives also. The Sumerian story, however, that Doctor Pinches now gives us appears to be simpler in its theology, and so will probably be found to be purer in its morality, lying nearer, as it does, in date of composition to the fountain head. As regards the Second Tablet, of which Doctor Pinches has given us a verbal account outside his paper, and Professor Langdon has in hand for translation, I would here record my protest against the professor’s theory that the Genesis story of the Fall is derived from the fact that Ishtar, regarded by the Babylonians as the mother of mankind, was also a serpent goddess. That Ishtar, who wept over the destruction of men by the Deluge as that of her children, was Eve there is little doubt; since Isha was the first name given to his wife by Adam, while in the well-known Græco-Egyptian story, Isis appears as the first queen of the world. But how does the worship of the serpent appear in the Babylonians’ own picture of the Fall of Mankind engraved as an archaic seal? There, both a woman and a man are seen seated, as though of equal rank, and plucking fruit from a tree, while the serpent stands behind the woman’s back; there is not the least sign of any worship tendered to this creature.

The Rev. JOHN TUCKWELL, M.R.A.S.: I should like to express my very hearty thanks to Dr. Pinches for the paper he has given us this afternoon. We are much indebted to him for keeping us abreast with the discoveries which are being made from time to time.

We are all grateful also, I am sure, to Professor Sayce for his very

instructive address. He has shown us very clearly that the literary analysis, to which the story of the Flood in Genesis has been subjected, is untenable, and with that analysis a good many other things go as well. It is well for us to weigh the fact that the copy of the Tablet, discovered by George Smith, is dated in the 7th century B.C., *i.e.*, before one if not both of the sections "J." and "P." are supposed to have come into existence, although the substance of them appears in Genesis and in almost the same order of succession.

Mr. Langdon, of Oxford, is so obsessed by this fanciful analysis that he tries to correlate "P." with a Nippur version, and "J." with an Eridu version, but in the fragment of a fourth tablet mentioned in Dr. Pinches' paper, to which he called our attention in 1911, "the bird of the heavens," which is supposed to belong to "J.," appears among other elements supposed to belong to "P." It is impossible for the critics to square with their theories the innumerable facts which are against them. Indeed they do not try.

May I differ from Professor Sayce on one point? I do not think the Genesis account contains any local colouring. The olive is not peculiar to Palestine, and Mount Ararat, where the ark is said to have rested, is a long way from Palestine. With regard to the sending out of the dove, it is said that, before the invention of the mariner's compass, seamen were accustomed to take doves or pigeons with them, and when they did not know in which direction the land lay to let them fly, and mark the direction of their flight. If no land was near they would return to the ship.

Rev. J. J. B. COLES remarked: How superior in dignity and solemnity of language and in accuracy of statement are the Biblical accounts of the Creation and of the great catastrophe of the Flood—to all the records of the Chaldeans and the tablets of the Gilgameš-series! The inspired collator and writer of the early chapters of Genesis corrected and removed the accretions and mythical perversions of earlier records. George Stanley Faber, in his *Origin of Pagan Idolatry*, shows that Paganism was derived from the history of the Flood, and that the myths and legends of antiquity were perversions and corruptions of patriarchal revelations.

Professor LANGHORNE ORCHARD expressed his agreement with Mr. Tuckwell's remark concerning the olive tree. They were all deeply indebted to Dr. Pinches and Professor Sayce for their addresses this afternoon. But there was one point on which he

ventured to differ from Professor Sayce :—Professor Sayce considered that the accounts of the Creation and Deluge in Genesis were derived from the Babylonian stories. Why should they be? Might it not have been the other way about? Could not God have given the account of Creation to Adam? could not Noah have written the account of the Flood? Genesis as a whole was no doubt written by Moses, but these two accounts may have existed in written form before him. In his view these portions of Genesis were earlier than the Babylonian accounts; it was undeniable that in simplicity and dignity of language, Genesis far excelled any Babylonian account. It is a common characteristic of tradition that it becomes encumbered, by lapse of time, with accretions and embellishments; the language becoming of that kind which we associate with myths. Evidently this has been the case with the Babylonian narratives. In these narratives the simple “ark” of the Genesis record appears as “the ship” and “the mighty boat”; and, to bring an interesting story more fully up to date, the “ship” is supplied with a “pilot” (introduced to us by name), and the swallow—sacred bird of the Chaldeans—takes his place with the raven and the dove.

How did the idea originate that the Babylonian account was earlier than that of Genesis? Probably from a supposition that the Genesis account was not anterior to the time of *Moses*,—a supposition inconsistent with facts.

The command given to Moses to write “in the Book”* may be fairly taken as indicating that *before* that early time a Bible record was in existence.

The CHAIRMAN asked the Meeting to express their great indebtedness to Dr. Pinches for his important paper; and Professor E. HULL proposed a hearty vote of thanks to Professor Sayce for coming to take the Chair that afternoon. Both votes were carried by acclamation.

The Meeting adjourned at 6.25 p.m.

NOTE BY THE LECTURER.

Professor Stephen Langdon’s monograph not having appeared at the date of correcting the above paper, I find myself unable to

* See the Hebrew in Exodus xvii, 14.

revise further the description of the newest version of the Babylonian Creation-story, given on pp. 312 to 322. After the appearance of the book, however, I shall supplement, if need be, these pages, and correct any errors, at present unavoidable, that I may discover.

On p. 307, above, in the third line from below, the possible translation of the Sumerian phrase is: "When he spake, he made the decree."

572ND ORDINARY GENERAL MEETING,

HELD IN COMMITTEE ROOM B, THE CENTRAL HALL,
WESTMINSTER, ON MONDAY, JUNE 21st, 1915,
AT 4.30 P.M.

THE RIGHT HON. THE EARL OF HALSBURY, F.R.S., PRESIDENT
OF THE INSTITUTE, OCCUPIED THE CHAIR.

The Minutes of the preceding meeting were read and confirmed. The SECRETARY announced the election of the Revd. James L. Evans as an Associate of the Institute. Also that the Council had selected as the subject for the Essay in the Gunning Prize Competition :—

“The Influence of Christianity upon other Religious Systems.”

THE PRESIDENT regretted to announce that Professor Naville was prevented by ill-health from being present with them, but he had sent his Address, which the Secretary would read.

ANNUAL ADDRESS.

THE UNITY OF GENESIS.

By H. EDOUARD NAVILLE, D.C.L., LL.D., Professor of Egyptology
at the University of Geneva.

WHO has not heard of the Higher Criticism and of the microscopical analysis it has made of the Old Testament, especially of the Pentateuch? Taking its rise in Germany, it has spread rapidly in the neighbouring countries, in France, in Holland, and even in the British universities. It asserts its authority, I may even say its dominancy, in a somewhat arrogant tone, pretending that its principles and systems are above discussion, and treating opposition with contempt. It is a relief to find that there are critics, particularly in England, who are not only thoroughly scientific, and I may add courteous, in discussion, but who approach these questions with a profound and innate reverence for what we call Holy Writ. I am thinking among others of the late Professor Driver and of Professor Skinner. It is the eminent Cambridge Professor whom I shall quote in preference in this lecture.

I intend neither to argue with the critics on general questions nor to show how weak, and even baseless, are some of

their arguments. My purpose is to consider the first book of the Pentateuch according to the principles of a school which is coming more and more to the front, especially in France, a school which does not found its claims chiefly and almost exclusively on philology or language, but on archæology, anthropology; in a word, on all sciences which may contribute to a better understanding of the past. Great literary works are explained by the customs and turn of mind, at the time, of the people amongst whom they were produced, by the geographical circumstances of the country, and very often also by what we see and hear at the present day.

For we do not admit that there is a deep break between the past and the present; the laws which govern the human mind continue in many respects the same from age to age. In my opinion, we often go very far astray in our interpretations of the past because we do not pay sufficient attention to what is seen or heard in our own time. We often resort to far-fetched explanations, we credit the ancients with inventions which rest on nothing but our imagination, or, in order to support certain theories, a great number of writers are *supposed* to have existed and worked, who have remained anonymous, and may have lived at epochs separated by centuries. In this way great poems are said to be the joint work of generations, which unconsciously created a work to which an author, also unknown or anonymous, is *supposed* to have given its unity.

In accordance with the other principles I have mentioned, the new school shows that a poem like the *Odyssey* proceeds from the thoughtful mind of one author, who is its creator, and from whom it springs.

I wish to show how admirably these principles apply to *Genesis*, how perfect is the unity of the book, and how no one but Moses could have been its author.

Let us look first at the *Genesis* of the critics. I shall use for that the form which is most generally accepted, that of Socin and Kautzsch, out of which Professor Bissell made the "rainbow" *Genesis* printed in various colours. In that form the book is represented as being a mosaic consisting of 264 fragments of seven different stones. The number of fragments would be much greater, if we added a quantity of what may be called chips, which in the written text are represented by less than a line or even by a single word. *Genesis* is a composite work, compiled by a redactor, of pieces selected here and there from the works of six different authors, with the addition of glosses of later time. Of these documents, those which have been used

the most are assigned to the so-called Priestly Code, a document which nearly all critics consider as post-exilian ; some of them attribute it to Ezra. Wellhausen gives as its date the year 444. The first chapter of Genesis belongs to that document, but not the second, which was written by the Jahvist or Jehovist, an author belonging to the Southern kingdom, and said to have lived in the ninth century. The Jahvist begins at chapter ii, with the narrative of the Fall, which has been modified by the insertion of words or sentences by the redactor. A hundred years later arose, in the Northern kingdom, the Elohist, who appears first in one sentence of chapter xv, and to whom we owe many portions of the text relating the lives of Abraham and Joseph. To these principal documents must be added another, said to be an older source of the Jahvist. It appears first in the genealogy of the family of Cain, afterwards in the history of the Tower of Babel. Its most important fragment is that relating the blessing of Jacob's sons. Another document is called J.E., because it is impossible to separate in it the two elements ; its fragments are not very numerous, they are chiefly found in the life of Abraham. Chapter xiv is a document apart ; its author's sole contribution, to which the redactor has added a good deal out of his own wisdom. Besides, there are later glosses, some of which are obvious, they are explanations for later readers ; others are called glosses merely because they do not agree with the critics' systems. The date of the redactor also is conjectural. It could not have been early, since he made use of the Priestly Code, which we saw Wellhausen assigns to the year 444, and it must be earlier than the Septuagint. Concerning the date of these translators, scholars disagree. It seems probable that the Law must have been the first to be translated into Greek, and that the traditional date, that of the reign of Ptolemy Philadelphus, 285-247, may be adopted. It is the earliest admitted by the critics. Thus the authors who may be said unconsciously to have contributed to the composition of this little book, Genesis, are scattered over a space of more than 600 years.

Let us now take a fragment of the book and see how it appears according to this theory. We have seen that chapter xiv is a document by itself ; we shall have to revert, further on, to the circumstances in which it is said to have been written. We go on to chapter xv. It begins with words from J.E. :

After these things the word of the Lord
came unto Abram

. . . is mine heir.

J.E., unknown date.

In this fragment, the word "Dammesek"	is a late gloss.
And behold, the word of the Lord shall be thine heir.	Jahvist, Southern kingdom, middle of ninth century.
And he brought him shall thy seed be.	Elohist, Northern kingdom, eighth century.
And he believed in the Lord, and he counted it to him for righteousness.	Jahvist again, ninth cen- tury.
And he said unto him . . . shall inherit it?	Redactor, fourth century.
And he said unto him: Take me an heifer . . . drove them away.	Jahvist again, ninth cen- tury.
And when the sun was going down is not yet full.	Redactor.
And it came to pass . . . the river Euphrates.	Jahvist.
The Kenite . . . and the Jebusite.	Redactor.
Now Sarai, Abram's wife, bare him no children.	Priestly Code, fifth cen- tury.
And she had a handmaid, an Egyptian.	Jahvist.

Leaving aside chapter xiv, in the twenty-one verses of the xv and the first verse of chapter xvi, we have no fewer than eleven changes of author. We pass from the unknown native place of J.E. to the Southern kingdom of the Jahvist, to the Northern of the Elohist, to the Southern again, to the unknown residence of the redactor, to the Northern kingdom again, to Babylon, where the Priestly Code was made, and we end in the Northern kingdom. The eleven various fragments correspond to the following dates: we pass from an unknown date to the ninth century, then to the eighth, to the ninth again, then to the fourth, again we go up to the ninth, come down to the fourth, up to the ninth, down to the fourth, then to the fifth and the ninth.

This is a picture of a part of Genesis which is the result of the labour of the most eminent critics. Moses does not appear in it, but at least five different authors absolutely unknown, all of them anonymous, without any one of the scholars who are responsible for their discovery saying where they lived, under what circumstances and for what purpose they wrote. They are nothing but literary creations; there is no clue whatever to their existence, except in the imagination of the critics.

On the other hand, we have the ever recurring testimony of the Old Testament that these books have an author, Moses; but this testimony is so completely thrust aside that now the Mosaic authorship of the Pentateuch is called an hypothesis. The position of the question has been reversed, the critics do not consider themselves as having to bear the *onus probandi*, as having to establish by solid proofs that Moses cannot be the author of the Pentateuch; on the contrary, it is the duty of those who hold fast to the traditional view, to prove that Moses existed and wrote.

I am not going to challenge the Higher Criticism and the value of its conclusions for the whole of Pentateuch. I shall confine myself to Genesis, and what I shall now endeavour to show is that the reconstruction of the book from fragments separated by more than six centuries and coming from various countries implies total disregard of the nature and purpose of the book, I should even say ignorance of the distinct reason for which it has been written.

In the solemn prayer of Solomon, on the day when the ark was brought to the temple, the king says (1 Kings viii, 53): "Thou didst separate them from among all the peoples of the earth to be Thine inheritance, as Thou spakest by the hand of Moses Thy servant, when Thou broughtest our fathers out of Egypt."

This is the mission of Moses, to which he remained faithful up to the day when he ascended Mount Pisgah. He has to teach the people that they have been chosen "to observe, to do all the Lord's commandments, and if they hearken diligently unto the voice of the Lord, the Lord will set them on high above the nations of the earth" (Deuteronomy xxviii, 1): "This is the covenant which the Lord commanded Moses to make with the children of Israel in the land of Moab, beside the covenant which He made with them in Horeb" (*id.* xxix, 1). But then this covenant was not something new. It had been made long before with the fathers of the Israelites. At the time of the persecution, it is said that "God heard their groanings, and God remembered His covenant with Abraham, with Isaac and with Jacob. And God saw the children of Israel, and God took knowledge of them" (Exodus ii, 24). When Moses is chosen for the glorious task of bringing the Israelites out of Egypt, when the oppressed people first turn a deaf ear to his voice, the Lord repeats to him: "I appeared unto Abraham, unto Isaac and unto Jacob as God Almighty . . . and I have also established My covenant with them, to give them the land

of Canaan . . . and I have remembered My covenant" (Exodus vi, 2).

Moses is the witness who has to teach the children of Israel what this covenant is, and constantly to remind them of its existence; and since the Lord tells him that He is the God of Abraham, Isaac and Jacob, he has to leave to the Israelites a record of how this covenant was made with their forefathers, he has to relate to them who was first chosen among the nations, and who received the promise that his seed should be like the stars of heaven. Moses has to draft their titles of nobility, he has to show them how among the nations one man was set apart, how he had to settle in a foreign country, who were his descendants, and how this select family became a select nation. He has to explain to them that from the beginning events were directed towards that purpose: the setting apart of the Israelites to be the worshippers of Jehovah. This he can narrate only in a book, the form of which is mainly historical, and this book is Genesis. As Professor Skinner says, "the whole converges steadily on the line of descent from which Israel sprang, and which determined its providential position among the nations of the world."

Now this is a plan, the lines of which are clearly marked, easily recognizable, and from which, as we shall see, the author of the book does not deviate in the least. This plan, many of the critics either have not recognized, or do not take into consideration. For them it does not exist, and it cannot exist, for it would be the negation of their systems. For them, Genesis is a collection of so many loose stones gathered from various places, out of which they make one building or several, but certainly not the temple erected in the place chosen by the Lord.

But let us consult the critics who approach and study the question with a spirit of reverence for the Word of God. Professor Skinner, whom for this reason the present writer will quote in preference to any other critic, says that it is an error to confuse unity of plan with unity of authorship. "The view generally held reconciles the assumption of a diversity of sources with the indisputable fact of a clearly designed arrangement of the material: three main documents following substantially the same historical order are held to be combined by one or more redactors; one of these documents, being little more than an epitome of the history, was specially fitted to supply a framework into which the rest of the narrative could be fitted, and was selected by the redactor for this purpose; hence the plan

which we discover in the book is really the design of one particular writer.”*

Let us now test the value of the combination proposed by the learned commentator, leaving aside all philological arguments which, as we shall see further, are out of question, and weighing the system against the character of the book, its purpose and the historical circumstances in which it must have been written. The plan determines the position of Israel among the nations of the world, the book relates the origin of the covenant which is the *raison d'être* of Israel's existence. If they are faithful to the covenant, their number will be like that of the stars, and they will possess as an inheritance the land of Canaan. Who could draw these precise lines, and who had the necessary authority to hold this language? I have no hesitation in saying: one man only, Moses, the man who was put at the head of Israel, when out of a single family it had developed into a nation, the leader who took them out of Egypt, who was at their head during their wanderings in the wilderness, who gave them their laws, and who was taken from them when they were on the threshold of the Land of Promise.

Not only was he the only man in position to devise this definite plan, but the plan was the sanction given to his works and to his words. He kept in view the promise made to the forefathers: he had to remain faithful to the covenant, and to carry it out, whatever might be the murmurs and the opposition of the people who were under his command. When the laws of the Pentateuch were put in writing, they had to be prefaced by Genesis, because there only could the Israelites learn who they were and what was their special mission in the world. Moses alone could leave them this record, which was necessary, for otherwise they might easily have forgotten their origin and the duties which they had to fulfil.

Now let us turn to Professor Skinner's theory. It seems hardly possible that such a plan could have been designed by the writer to whom it is attributed. This author is supposed to be the redactor who lived probably in the fourth century, a man absolutely unknown. Was his abode in Palestine; did he share the trials which his countrymen had to endure at the hand of Alexander or his successors, or had he followed the example of many of his countrymen: had he taken refuge on the banks of the Nile? And what reason could he have for

* *Genesis*, Introd., p. xxxii.

writing a book like Genesis? He was not like Moses at the moment when the glorious promises were to be fulfilled, when the promised land was in sight, when they were to take possession of the inheritance which God Himself had guaranteed to his ancestor. On the contrary, he was part of a remnant of a people, the glory and power of which were gone. He could look back to the reigns of David and Solomon as being the most brilliant epochs of the nation's life, but after them the kingdom had been rent in twain, and from that day the decay had been going on fast; one of the kingdoms had disappeared, the inhabitants of the other had known again a life of bondage in a foreign land. A few of them had returned; they had rebuilt the temple, but they were not independent of the Persian king, and after the destruction of the Persian Empire they had to feel the heavy and cruel yoke of the Syrian kings. Was this a time when a writer would picture to his readers the glorious prospects which God had opened before their ancestor more than a thousand years before? Comparing the life of Abraham with the condition of his descendants after the return from the Captivity, the life of the patriarch could not appear otherwise than as a record of unfulfilled promises and baffled hopes.

Who was the author? Who gave him the authority to speak in the name of God? He was neither a legislator nor a prophet; and what special claim could he put forward to be listened to? Why should his countrymen believe him? It is true that he hides himself behind Moses; he puts his book at the beginning of the five Mosaic books; but it seems very doubtful whether the Moses of the critics could appeal to the redactor's contemporaries. It is one of the favourite arguments of the critics in all the domains of antiquity that a late author, in order to give his writing a weight of which, by itself, it would be completely destitute, puts it under the name of some undisputable authority. Here it is Moses. But the Moses whose mere name commands respect and obedience, and who would silence opposition, is the man whose character and actions come out of the traditional view of Pentateuch. One can hardly understand how the name of Moses had any weight with the post-exilian Jews, if Moses was the man who has been restored to us by the critics. His legislative work was nothing, since the oldest part of it, Deuteronomy, is a forgery dating from the year 621, and the bulk of his laws also are a forgery due to Ezra or one of his contemporaries. As for his biography, the record of it was contained in two documents, the earlier due to a man or to a school belonging

to the Southern kingdom, the later due to a man or a school belonging to the Northern kingdom. How little of his works and life was recorded in these two documents! Especially one of the most glorious episodes of Moses' life—the crossing of the Red Sea—is briefly mentioned, while it is given with most details in the post-exilic books. If the tradition of the Israelites had not preserved more than what there is in J. and E., certainly it could not give them the idea of one of those commanding heroes whose memory is a ruling power in a nation.

And how was this redactor to write his book with the definite plan he had in view; where was he to get his material? If he took the Priestly Code as his framework, he found there a tendency quite different from his, a spirit of legalism and institutionalism carried so far, as Professor Skinner says, "that it would have cut away the most precious and edifying narratives of the past, if the religious feeling of post-exilic Judaism had not compelled the author to combine such discordant elements."

As for the Jahvist and the Elohist, distant in place and in time, in some parts they are parallel, but their tendencies are not the same. The beginning of Genesis is supposed to show that they had not the same conception of divinity, since they did not call it by the same name. Nothing is known of the extent of their books, of the purpose for which they were written, of the way in which the Elohist could be preserved after the Northern kingdom had disappeared and had been replaced by the Samaritans.

Even admitting that the redactor filled a quantity of gaps, and, in order to cement together all these loose fragments, that he put in a great deal of matter for which he is responsible, we cannot admit that a book like Genesis, with a plan so clear, so definite, so admirably worked out from beginning to end, can be derived from a quantity of fragments put together, the origin of which is so different in time and in circumstances. Genesis is the work of one author, and this author, as we shall see, could only be Moses.

I cannot revert here to the arguments which I adduced before in a book devoted to show that Moses did not write in Hebrew. Everyone agrees that he did not use the characters called square Hebrew, which are those of our Bibles. This alphabet is, perhaps, a little earlier than the Christian era, but certainly not much older. But he did not use even the Hebrew language. In his time Hebrew was not a literary language: it may have been the dialect which the Hebrews had brought to Egypt from Canaan, but it was not the language of books.

Books, especially religious books, and all documents which had to be preserved, were written in Babylonian cuneiform on tablets of wet clay which generally were baked afterwards. The idea that the books of Moses were first cuneiform tablets has been put forward by others before me, especially by Col. Conder and Professor Sayce. This is a startling fact to many people, and a stumbling-block to the critics. Therefore, without entering on a lengthy discussion of this point, I feel bound to mention a few of the chief arguments in its favour.

The time of Moses is the nineteenth dynasty, a series of sovereigns who came to the throne after serious troubles, the cause of which was a religious revolution made by King Amenophis IV. The kings of the nineteenth dynasty were certainly far less powerful than their great predecessors of the eighteenth, the Thothmes and the Amenophis, the conquerors under whose dominion the Egyptian Empire reached its utmost territorial expansion.

The kings of the eighteenth dynasty had conquered Palestine, and had established in the principal cities native governors, who from time to time wrote to their sovereign, and reported what was going on in their cities. These letters and reports have been preserved to us in a city of Middle Egypt, now called Tel el Amarna, where the archives of the kings Amenophis III. and Amenophis IV. were discovered. And these archives contain not only their correspondence with their subordinates, but also letters to and from great kings of Mesopotamia. Every one of these documents, without a single exception, is a clay tablet written, or, rather, engraved in Babylonian cuneiform. It was certainly an archaeological event of first importance when the fellaheen of Tel el Amarna came upon this hoard of cuneiform tablets. It first revealed the surprising and absolutely unknown fact that Babylonian cuneiform was the usual written language in Palestine at the time of the eighteenth dynasty. It is quite natural that the kings of Mesopotamia should use that language and writing, which evidently were their own. But it was all the more surprising and unexpected from governors of the Palestinian cities, who had to write to their sovereign and report to him what was going on in the region they governed. Why did Abd-Hiba of Jerusalem, Abi-milki of Tyre, and all the prefects of Zidon, Megiddo, Ashkelon, Gaza write in Babylonian unless it was their own written language? For the King of Egypt did not understand it: he was obliged to resort to the help of a dragoman. Letters of that kind must be in the language either of the ruler or of the subject. Since it was not

that of the Pharaoh, it could only be that of the Canaanite governors.

The correspondence of Tel el Amarna, which is later than the first settlement of the Hebrews in Canaan, is not all we have of cuneiform documents from Palestine. A rich find of tablets was gathered at Boghaz Keui, in Asia Minor, the capital of the Hittites. From Palestine itself originated a series of letters and edicts, written both in Assyrian and Hittite, concerning the Amurru, the Amorites. In the land of the Israelites two contracts have been found at Gezer, of the years 650 and 647, and eight tablets or fragments at Taannek. As one of the excavators, Dr. Sellin, says: "Even supposing that Babylonian cuneiform was used only by the rulers and their officials, and that the people could not read or write, this fact is certain: in the already extensive excavations carried on in Palestine no document was ever found except in Babylonian writing. As for the Phœnician old Hebrew writing . . . it cannot be asserted with certainty that it existed before the ninth century."

Thus we know now for certain that at the time of Moses, and perhaps as late as the reign of David and Solomon, Babylonian cuneiform was the literary language and writing of the whole of Western Asia, and we do not know with certainty of any other book language at that time.

Let us now revert to Moses. He had been brought up at the court of Pharaoh, and instructed in all the wisdom of the Egyptians. He could write, and certainly the Semitic writing which he learnt at Pharaoh's court was not the Canaanite or Phœnician or Old Hebrew, which did not exist, even in Phœnicia, otherwise the Phœnician officials would have used it in their letters and reports to their sovereign. The answers which Pharaoh sent to the officials, of which we have several, were not in Egyptian, which these officials would not have understood: they were in their own language, in Babylonian cuneiform. Therefore it was necessary that Pharaoh should have at his court men who could write the language of Abd-Hiba of Jerusalem, Gitia of Ashkelon, and all the other governors, dragomans like those of the embassies of the present day. If Moses was taught a Semitic writing, which seems natural considering his origin and position, it is obvious that he learnt Babylonian cuneiform, a writing which allowed him to have intercourse with the Semitic world of his time.

Besides, this language was eminently adapted to the books of Moses. He had to write God's words, God's commands, inspired laws, and Babylonian was not only the language spoken

and written in Mesopotamia, the land from which the Hebrews originated, but, above all, it had been used by the famous legislator Hammurabi, the great law-giver, to whom the god Shamash was said to have dictated his commands, and it would have been extraordinary if Moses had not known the existence of this remarkable code of laws. For Moses, Babylonian cuneiform must have been the only language worthy of recording God's words.

This fact of Moses having written in Babylonian cuneiform involves two consequences of the utmost importance. His writings were not in books, in rolls of skin or papyrus, but on clay tablets. This implies a complete change in our method of studying these writings. We have to do away with the description and nature of what we call a book. A book has a definite order. If it is divided into chapters, the middle ones or the last will not be written before the earlier ones, especially if it is written on a roll. The tablet is something quite different: it is a whole composition in itself. It is not connected with another so closely as two chapters of a book, and very often it has no fixed place in a series. Tablets are not always quite independent. They may form a running narrative, and then the connection from one to the other is indicated by the last word, or by the last sentence of one tablet being repeated on the next.

A cuneiform book is a collection of tablets, but such a collection, as in the case of Genesis, may have been made for a definite purpose with a plan, which the author keeps in view. This plan is not exactly like that of a book of the present day. It is more like that of a lecturer who has a series of lectures to deliver on a definite subject. He cannot do it without a very strict plan, without an exact outline in his mind of what he has to teach or to prove. Very often he will begin a lecture with a short summary of what he has said in the preceding one, or he will revert to a fact mentioned before, which will be the subject of further development, or, if he is reading a narrative of some piece of literature, he may merely read over again the last sentence where he stopped. It is exactly so with the cuneiform tablets and the apparent disconnection between them; the necessary repetitions from one to the other have been interpreted as showing the hands of various writers: they are the foundations on which rests, partly, the theory of the Elohist and the Jahvist.

It is possible that Moses had already set apart the tablets which form the book of Genesis, and which, as we said, are all

written with a definite purpose. Nevertheless, we do not know who divided his writings into five books. In this respect the Jewish tradition points to Ezra, and I see no reason to discard it. Ezra did more: he put these writings in book form and in book language, if it had not been done before.

Time does not allow us to speak here of the second discovery of the utmost importance, which has been made also in Egypt. The Jews who settled in Egypt during the last Pharaonic dynasties and the Persian dominion, spoke and wrote Aramaic, the book language and writing which succeeded to cuneiform. Therefore the first change made in the language and form of the books of Moses was to turn them into Aramaic before the second change took place, which I believe to have been simultaneous with the invention by the Rabbis of the square Hebrew alphabet, viz., turning the books into Hebrew, which was the language of Jerusalem. These changes were not translations: they were mere changes of dialects.

I wish I could mention here some of the arguments which seem to establish that before writing Hebrew the Jews wrote Aramaic; but, leaving this aside, I revert to the fact that Moses wrote in Babylonian cuneiform. The most serious conclusion derived from this fact, a conclusion the importance of which cannot be undervalued, is that the oldest Hebrew documents are not originals. In their present form they are transcriptions from another idiom: translations, not from different languages, but from different dialects, and changes of script. Philological criticism, on which the reconstruction of the books of the Old Testament rests for the most part, has been exercised on translations. The texts to which the critics have applied their microscopes, and which they dissect and cut up into small bits, are not originals. They are in a later form, after having undergone one or two transformations. One can readily understand what a blow the fact of the Pentateuch having been originally written in cuneiform deals to the theory of Wellhausen. No wonder that the High Critics are dead against it, and that the attempt to combat them with evidence derived, not from a host of supposed and anonymous authors, but from documents which we can hold in our hands, like the Tel el Amarna tablets, or the papyri of Elephantine, are called by them "extravagant conjectures," or "moving in a circle of errors" (Koenig).

We shall now briefly review the tablets which form the book of Genesis, and we shall see how everything converges towards this central idea, the choice of Israel as the chosen people with whom God made a covenant. This is the golden thread which

I see running through all the tablets from the first to the last.

The six first bring us down to the death of Terah, just before Abram is called out of his country. Abram is the man chosen by God; not only have we here his pedigree, but a summary of all the events which preceded this choice, as far back as the creation of the world.

Moses has not been a witness of these events, as he was for those of Exodus and the journey in the wilderness, and the question is: How could Moses have the knowledge of those facts, and how did he write these records? Here, whatever opinion is put forward cannot be anything but a conjecture, and this seems to be the most probable.

Abram came out of Mesopotamia, the country of tablets. The thousands of them which have been preserved give an idea how numerous they must have been. They deal with all kinds of subjects; but the religious tablets are in great number, and one may easily fancy that some of them were the religious books of families or tribes. The reason which induces Abram to leave his country is a religious one; this is implied by these words: "The Lord said unto Abram: Get thee out of thy country." It is a command of God. Why and in what measure his religious ideas differed from those of his surrounding countrymen, whether he was disliked, or perhaps persecuted by them for that reason, we do not know. But the departure of his tribe reminds us of what has been seen in modern as well as in ancient times: a tribe migrating into a distant land, to be able to worship in peace according to its faith. Such a tribe, if it has religious books, will take them on its journey. I believe Abram did the same. He took his tablets, which were his pedigree as far back as the creation of the world. It is well known how great an importance Orientals give to pedigrees: they are the beginnings of history. In the early past there was no other record of the events than those which concerned a man or a family. Besides, tablets were easy to carry on a journey: they were made of a tough and lasting material; they could travel a long way, and were not so easily damaged as papyrus or skin. The considerable number of them which have been preserved shows how well adapted they were for a document intended to last for generations.

I quite agree that I cannot give any positive proof of the idea that the first tablets of Genesis, which Moses had at his disposal, were brought by Abram when he left his country for Canaan: but this conjecture seems to me in accordance with

the circumstances and the customs of Oriental people. It is possible that there were more, and that Moses made a choice among them, and only took those which had a direct bearing on his plan, and which were necessary. He had to rewrite them, for there are in these chapters distinct traces of the hand of Moses which we shall notice. These traces are chiefly some Egyptian features, showing the man who had lived in Egypt and who knew it well.

The first tablet is the creation of the world. It is a short account of how the earth first appeared, and afterwards was fitted up with everything which gives it its present appearance; man comes last as the crowning work of the Creator, but his formation is not described at great length: his nature is given, and the reason for which he was created last. He was to have dominion over the whole earth. Here already we have something which points to Egypt: the six days of Creation. We must always remember when we interpret texts of a very early date that for those ancient people abstract ideas did not exist. They must always use a metaphor, have recourse to something falling under their senses. Take, for instance, the idea expressed by the word "period"; such a word does not exist for an ancient Egyptian, a space of time independent of something which touches his body or his life is a notion strange to him. He will understand the day, the month, the year and other measurements of time of the same kind. Therefore, if he wishes to speak of a certain duration of time, having a definite beginning and end, the most obvious metaphor at his disposal will be to call it a day. I cannot bring here the Egyptian proofs of this assertion, but they seem to me to show that the sense to be given here to the word "day" is a period with beginning and end.

The tablet ends with these words, which are erroneously put in the second chapter: "these are the generations of the heavens and of the earth when they were created."

The following words are part of the second tablet: "In the day that the Lord made heaven and earth." Here the author reverts to something which has been said in the first, as a lecturer quotes again what he has said before, in order to unfold all its consequences. He goes back to the very beginning, "in the day when heaven and earth had been made," and he sums up briefly what came after. "There was yet no plant and no herb, for no rain watered the land and no men tilled the ground." He contrasts the primitive state of the earth when it was first created and before the existence of man, with the

time when man had been formed and had been put in the Garden of Eden. There vegetation was luxuriant, there was every tree pleasant to the sight and good for food, for two obvious reasons: a river went out of Eden to water the garden and man was there to dress it and keep it. At the beginning, no rain and utter barrenness; on the contrary, in the Garden of Eden, where man had been established, abundance of plants and fruits due, not to rain, but to a river which divided itself into four branches. I do not believe the critics have ever paid any attention to this fact, since they suppose that all which is said of the river is an interpolation due to a redactor. This, I do not hesitate to say, shows a strange lack of insight into the composition of the narrative. Why should the author have mentioned that special point—absence of rain, and the emptiness which resulted from it, if it was not to put it in contrast to the river in the garden and to the plenty derived from it?

This again reveals an author who had Egypt before his eyes. To him, fertility is not due to rain, but to a river, and curiously this river divides itself into various branches, like the Nile. There are other instances in which Moses quotes Egypt as the type of a fertile and rich country.

The critics consider that what has been called the first tablet belongs to the Priestly Code, it is therefore post-exilic, end of the fifth century. Chapters ii and iii, which are the beginning of the second tablet, are Jahvist. They belonged to the author who lived in the Southern kingdom in the ninth century. The second chapter is, therefore, four hundred years older than the first. The Jahvist or Jehovist is distinguished chiefly because he uses for the name of God *Jahveh*, which the Hebrew scholars since Ewald say is the right reading for the word which used to be read *Jehovah*, and which is translated "The Lord." The word for God is *Elohim*, the name used by the other writer a hundred years later in the Northern kingdom. But since throughout these chapters and the following both names are joined together, *Jahveh Elohim*, the Lord God, the word *Elohim* is supposed to have been added everywhere by the redactor.

The description of the river of Eden is said to have been inserted by the redactor. The third chapter, except the word "God," is entirely Jahvist. In the fourth, after the sixteenth verse, the descendants of Cain are part of what is called an older Jahvist, another unknown document, perhaps the oldest which is in Genesis.

In my opinion, the tablet ends with the first verse of

chapter v, which I translate, according to the Septuagint: "This is the book of the generation, not of Adam, but of mankind," ἀνθρωπῶν. It ends exactly like the first tablet, by words wrongly attributed to the following chapter. Thus the second tablet, which is long, describes what happened to man when he was created: it is the development, the crowning act mentioned in the first tablet, the creation of man, who was made in order to have dominion over the earth. There it was said only that God created him male and female; but all the details about this creation: how God said that it was not good that the man should be alone, how Eve was formed out of Adam's rib, all this would have been out of place in the first tablet, where each work of the six days is summed up in a few words. Its place was in the second tablet, which is that of mankind; there also is the Fall, the description of their first children. Very soon one of these children, Cain, falls away. Cain and his descendants are mentioned once for all; we shall never again hear of him and his posterity; because Moses was not writing a book of history; he only recorded the events which have a bearing on Israel and his mission.

The critics are nearly unanimous in stating that chapters ii and iii are not of the same author as chapter i, and also that it is possible to trace two narratives which have been combined. As for the first point, Professor Skinner's chief arguments are the following: "From chapter i it differs fundamentally both in its conception of the primeval condition of the world as an arid waterless waste, and in the order Creation works: viz., man, trees, animals, woman. Alike in this arrangement and in the supplementary features—the garden, the miraculous trees, the appointment regarding man's position in the world, and the remarkable omissions (plants, fishes, etc.)."*

These arguments are derived from a totally different view of chapters ii and iii. For the learned commentator, these chapters are a mere narrative of Creation, which does not agree with the former, neither in the order of creative works, nor in the description of the earth, therefore this implies the existence of another author. But this seems to me a misconception. We have not here two parallel narratives of Creation, but only one. The first chapter is a short and, I may even say, dry summary of the events, which are divided into six days; for each day is recorded in a few words what took place, whatever duration

* *Genesis*, p. 51.

may be assigned to a day. The sixth is the crowning day: man is created, and the author cannot say less than that man was the aim and end of the whole work. It was for him that heaven and earth came out of nothing, and afterwards that plants grew and that animal beings of all kinds were born, therefore he was to have dominion over the whole. As to the special way in which he was made male and female, and to the place of the earth which was assigned to him for his abode, all that is left for another tablet. In the first chapter we do not hear much more about the creation of man than of animals, except that he is to be the ruler.

The second tablet is the generation of mankind. It is specially devoted to man, therefore there is no need to repeat everything which was in the first, there is absolutely no reason to speak of fishes, nor is there any necessity for following a chronological order of creation. On the large surface of earth, the general features of which were described in the first chapter, God had prepared a beautiful abode for man. The second chapter supplements the very scanty information which we had about the sixth day, and it very aptly begins with contrasting the beginning of the earth's formation with its appearance at the end, when man, the masterpiece of the whole fabric, was settled in his magnificent abode. An author who describes a superb palace in which a prince settles for the first time, may insist on the beauty of the furniture, but he is not obliged to revert to the way how it was built and to the various phases of the construction.

A great importance also has been attached to the fact that God is named there Jahveh (Jehovah). But this also seems quite natural. Moses, the writer, has been taught that in his dealings with men the usual name of God is Jahveh. When he relates what God said and did to man in the garden, he speaks of Jahveh, the God he knows under that name. In the first chapter, God is merely the Creator, the God of heaven and earth, who does not speak differently to man and beast, except in what has reference to man as the ruler of the earth, and even this may be considered as an ordinance concerning the whole created world. Therefore God will be called Elohim.

Another indication supposed to point to two different authors is the question of the two trees. The first description of the garden speaks of the tree of life in the midst of the garden, and the tree of the knowledge of good and evil. But the prohibition not to eat of its fruit applies only to the second, on which alone the story of the Fall turns. The tree of life is mentioned only once

again, when Adam and Eve are driven out of Eden. I agree with the critics, that the existence of these two trees is a difficulty; I should even call it one of the mysteries, of which there are several in this marvellous narrative of the Fall. But I cannot say that the supposed existence of two writers is an explanation; what light does it bring on this unintelligible question to admit that the tree of life is a creation of another writer? One can admit a late redactor adding a gloss in order to clear up in some way a vague point. But in this case, if he combined two versions, he only obscured that which seemed more simple, that which spoke only of the tree of knowledge of good and evil. Certainly the result of this combination cannot be called satisfactory. Let us consider the two trees as being one of the difficulties which we cannot solve; but that has no bearing on the tablet itself, which is the natural sequel to the first: after the creation of the world, that of mankind.

The third tablet begins (chapter v, verse 1) like the first: "In the day that" . . . It is not long. It describes the generations of man as far as Noah (vi, 9) and it ends with these words, which we translate from the Hebrew like the end of the first tablet: "This is the generation of Noah." The words certainly do not refer to the following, which is the Deluge. Though the text is short, it is a perfect rainbow in the coloured Genesis: it has no fewer than four authors. But if we remember the plan which Moses had in view—the way of God's leading for the people of Israel—there can be no order more logical than to run quickly over the past, sum up the genealogies, leave aside what is useless, and end with Noah. The thread which goes through the two first tablets is easily recognizable in the third.

In the preamble, we notice the man who knew Egypt well: in the day that God created man male and female, He created them so that they might have children. This seems at first quite useless. But these words written by Moses in this place show that he repudiates some ideas current among the Egyptians. A god, in their mythology, may be said to give birth to his son from his own substance, or he says to men: "You are a tear from my eye." With these ideas Moses absolutely disagrees, and this is the reason why, when he is going to describe the generation of man, he begins with these simple words: "He had created them male and female."

The new tablet, that of the Deluge, begins with these words (vi, 5): "Noah was a righteous man, and perfect in his generations." This tablet, more than any other, bears the character of

having been brought from Mesopotamia. It is supposed to be also a combination of two different writers. I cannot go into that question, in which philological arguments are mixed; I do not see why it must be attributed to more than one author. This is the most important event after the Creation, therefore the writer dwells at some length upon it. The tablet contains also the events at the close of Noah's life, and it ends with the death of Noah.

The following is the xth chapter, which is still open to a great deal of discussion. Time does not allow me to explain why one of the chief objections, the presence of Canaan among the sons of Ham, agrees perfectly with what we know of the first inhabitants of Canaan.

The tablet begins with these words: "Now these are the generations of the sons of Noah," and it ends thus: "These are the families of the sons of Noah after their generations, in their nations, and of these were the nations divided in the earth after the flood." This sums up the genealogy and teaches us that the division of nations took place after the Flood. The next tablet shows us how this division took place. It begins with the necessary introduction: "There was one time when the whole earth was of one language and of one speech." But when men tried to build the tower of Babel, the Lord confounded their languages, and scattered them abroad upon the face of all the earth.

Now in this vast confusion of nations and languages, where would the chosen people be found, those who were set apart? They sprang from one of the sons of Shem; therefore the writer reverts to this son of Noah, and to part of his descent which he had given more fully in the preceding tablet. Arpachsad was the ancestor of the elect, and the writer enumerates all his descendants as far as Abraham, and to the death of Terah, Abraham's father.

It seems to me a grievous error to attribute this tablet to three different authors. There is absolutely no inconsistency. Let us remember what the author has always in view, the chosen ones, the elect. When he has just described the complete confusion which reigns upon the face of all the earth, he must tell us where the chosen one will be discovered, and from whence he springs. It is from among the descendants of Shem, from Arpachsad. His genealogy down to Terah is the necessary sequel to the narrative of the dispersion at Babel, it is as strongly linked to it as possible, and therefore I do not understand why critics attribute the first episode to the first Jahvist and the genealogy to the Priestly Code, something like 500 years later. I cannot

consider it otherwise than another misconception of the leading idea of the writing.

We have now come to the end of the first part of Genesis, we have reached Abraham, the first elect, and the father of the chosen people. We have before our eyes his complete pedigree, as far back as the birth of heaven and earth, and let us consider how the whole narrative is directed towards Abraham. The earth is created, and man; in consequence of the Fall, the descendants of Adam become wicked and corrupt, except Noah. He escapes in the ark, and he has three sons; from these, all the nations are divided, they were scattered after the attempt to build the tower of Babel, but among all these nations who were dispersed over the earth, one family is chosen in Shem's posterity, the family of Arpachsad, the ancestor of Terah. We have in these six tablets all that is necessary, a sufficient introduction to show from where Terah originates, but nothing useless. The posterity of the three sons of Noah is necessary to show how the earth was replenished by a great number of nations after the Deluge, but after Arpachsad has been chosen, we shall hear no more of the posterity of Ham, Japheth and even Shem. Can such a remarkable unity of purpose and idea be expressed otherwise than by unity of composition?

As I said, these six tablets I consider as having been brought from Mesopotamia when Abram went to Canaan. There is nothing extraordinary in this assumption. We know how those tablets travelled, and we have seen now of what peculiar interest they were to Abram; it may be that they had for him a religious value which was disregarded by his countrymen. Anyhow they were his pedigree, they showed who were his ancestors as far as Adam; and such genealogies are greatly valued by Orientals, even at the present day, and not only for themselves, but, for instance, for their horses.

When I say that these tablets were brought from Mesopotamia, and that Moses merely rewrote them and embodied them in his own collection of documents, which for convenience we shall call a book, people will object that I only throw back the difficulty. Who first wrote them in Mesopotamia, and how came the author to have all this information about the Creation and the Fall, the Deluge, etc.? I intentionally do not touch this point, where I should have to speak of revelation; I do not go further back than the author of Genesis, Moses.

Abraham is the first elect, the father of the elect nation which has to go out of Egypt. One may fancy that Abraham's life is the most important narrative Moses has to write, his choice by

the Lord, the covenant which God made with him, the promise that he would receive Canaan as his inheritance, and that his seed would become a numerous nation possessing Canaan as an inheritance, this is the corner stone on which rests the whole future of Israel. No wonder, therefore, that Moses dwells at great length on his ancestor, on the various episodes of his life, on his character, on the nature of his intercourse with God. What he is aiming at is to make a good portrait of him, to have a faithful record of his deeds. The future generations must know who was the man whom God considered as fit to become the head of a posterity to which He would commit His laws, and whose chief mission would be to serve the Lord faithfully.

In writing such a biography, there was no need to follow a strictly chronological order. No doubt this order would be most convenient, but this was not the ruling principle. Moses was not writing a book of history. History, such as we understand it, did not exist in his time. There was nothing but biography. Even historical inscriptions in Egypt, or the books of Kings and Chronicles, are nothing but biographies of the king, or events connected with his person. In a biography, if the author has to emphasize an idea, or if he wishes to group certain facts, he will leave aside chronological order, which is no rule for him; we shall find at least one instance of this in Abraham's life.

Since Moses is going to write a running narrative, his tablets will be much more closely connected than the first six. He probably did as the Assyrians, and repeated at the beginning the last word or the last sentence of the former tablet. Therefore, his tablets are not as easy to distinguish as before. But here arises a question which is as difficult for the critics as for those who hold to the Biblical tradition. How did Moses know all he relates about Abraham? Were there any written records kept during Abraham's life? Perhaps there may have been, especially concerning his dealings with his neighbours, or his military expeditions against the kings who had carried Lot away. One can fancy one of his men, like Eliezer his servant, the elder of his house, that "ruled over all that he had," putting down in writing on a clay tablet the principal events of his master's life, which would be transmitted to his descendants, but the episodes which are most striking, those in which he was alone a witness, like the wonderful dialogue between Abraham and God about the impending destruction of Sodom, an episode to which we shall have to revert further, how are we to explain these? Here it seems impossible not to pronounce the word at which some of the critics scoff—revelation. Moses was directed by the Spirit to

describe what the intercourse between God and Abraham had been.

Here the critics have no explanation of the difficulty ; to say that this dialogue is the work of the Jahvist, written down in the ninth century, is no solution. How did the Jahvist know it? Certainly not by tradition. This scene had no witness but Abraham himself. The Jahvist must, therefore, have invented it. The same may be said of many fragments of Abraham's life, in which all the colours of the rainbow have been profusely scattered, as one can see.

Abraham has left Haran in obedience to God's command, probably in order to remain faithful to the worship of Jahveh. Not knowing how he will be received in the foreign countries where he will settle, whether as an enemy or as a chief with whom an alliance can be made, he makes his wife a request which we shall quote in his own words (Gen. xx, 13): "It came to pass, when God caused me to wander from my father's house, that I said unto her: This is the kindness which thou shalt show unto me: at every place whither we shall come, say of me: He is my brother." So he fully expected what happened to him with Pharaoh and with Abimelech, and there is nothing extraordinary that it should have happened twice in his life, if we give to this episode the interpretation which we derive from the tablets of Tel el Amarna, and is in keeping with the customs of Oriental chiefs and kings about alliances and marriages.

I cannot go through the whole history of Abraham, which raises a great number of questions ; I shall only dwell on a few points. One of the chapters which has caused the greatest number of discussions is chapter xiv, the war of the king of Sodom and his neighbours against four foreign kings coming from the East.

I may here quote the recently expressed opinion of a German scholar settled in America, Professor Haupt. His opinion may be considered as the last word of critical science. "The purpose of this chapter is an encouragement to rebel against foreign yoke. Just as Abraham with his 318 followers could rescue the booty from the mighty king of the Elamites, so Zerubbabel and his followers can set the great king of Persia at defiance. This chapter must have been written in the beginning of the year 519." This is certainly an extreme opinion, but it is a good instance of the way of reasoning of some of the critics. No argument at all, a mere subjective opinion. Rather than take the plain language as it stands, it is interpreted as a kind of moral cordial given to Zerubbabel when he attempts to

rebel against the great king. It is not brought straight to him: it is hidden in a biography of Abraham. What this biography was it is difficult to say. This chapter would be more than sixty years older than the Priestly Code, which is the framework of Genesis and the Pentateuch in general, and besides, we have to go down perhaps a hundred years before the redactor gave Genesis its present form. All Zerubbabel could know about Abraham, he got from the Jahvist and the Elohist.

Most critics consider this chapter as being a document by itself, which is generally said to be post-exilian. Such is Professor Skinner's opinion. But there is one point which seems to me to have been unduly left aside by the critics; it is the intimate connection between chapters xiv and xv. I beg Professor Skinner's pardon. To my mind not only is the connection between these two chapters neither "far-fetched" nor "misleading," but at first sight chapter xv appears as the natural outcome of chapter xiv.

Chapter xv, which was described before, is one in which the mincing process has been carried to the furthest limits. Its twenty-one verses are said to be made of nine fragments, four of which belong to the Jahvist, one to the Elohist, three to the redactor, and one to the document called J.E., which cannot be assigned either to J. or to E. This dissection of the chapter not only shows a lack of understanding of the leading thought of the writer, but it destroys a beautiful episode which unfolds itself admirably, and brings out in a remarkable way the faith of Abraham; so much so that the writing asserts it. Abraham has just achieved a marvellous feat of arms. With his own men he has routed the army of the Mesopotamian kings; he has delivered Lot; in the presence of the king of Sodom he has lifted up his hand unto the Lord not to take the slightest reward. On his return the Lord speaks to him in words which are used only on that occasion. Well might Abraham fear a return of the kings, some vengeance wrought upon him, or some attack from the Canaanite chiefs among whom he was living. The Lord says to him, "Fear not, I am thy shield, thou hast lifted up thine hand unto me that thou wouldst not take aught from the king of Sodom. I shall be thy reward." Quite naturally Abraham, who has plenty of wealth, says: "What wilt Thou give me? I go childless." And there comes the glorious promise and the covenant which is confirmed by a wonder. Is it not clear enough that chapter xv is the continuance, or rather the consequence, of the xivth? Surely the

author of Genesis himself wrote how the covenant was made with Abraham. This is the confirmation of the selection of Abraham, and perhaps the most solemn moment in his life. If Moses describes this covenant, he certainly also describes the occasion on which it was concluded.

In chapter xxv we have an example of the author going out of the chronological order. The chapter begins with these words: "And Abraham took another wife and her name was Keturah," and the text goes on giving the list of all Abraham's sons whose mother was Keturah. This tablet gave Abraham's posterity exclusive of Isaac's and Ishmael's descendants. We must picture to ourselves Abraham as one of those nomad chieftains, what we should now call a sheikh. With those men polygamy was the rule, as it still is. One of their wives was the predominant one: she had special rights, and her sons were the heirs. But a powerful and rich man might have slaves and concubines, wives of a lower rank, whose children would receive gifts like the children of Keturah, while to Isaac was given all that Abraham had.

We must not think, therefore, that Keturah became Abraham's wife only after Sarah's death. She is mentioned at the beginning of the tablet which relates the patriarch's end, and which gives the list of his posterity and the distribution of his wealth. We must remember that we have here not two chapters but two tablets; they are not the continuation of each other. Here the author recalls something in the past; the true meaning would be better rendered if we translated: "Abraham had taken another wife."

I cannot quote all the instances in which the hand of Moses is recognizable. I should like to mention one which shows what I may call his spirit, his faith, and especially his familiar intercourse with God. It is said of Moses that the Lord knew him face to face (Deuteronomy xxxiv, 10), that He spoke mouth to mouth to him (Numbers xii, 8). Is it not the same with Abraham? Certainly it is the same man who wrote the marvellous sort of discussion between Abram and God about the destruction of Sodom and Gomorrah, when Abraham dared not plead for more than ten men, and Moses' own prayer when on the border of Canaan he besought the Lord, saying (Deuteronomy iii, 25): "Let me go over, I pray thee, and see the good land that is beyond Jordan," and received the answer: "Let it suffice thee, speak no more unto Me of this matter." Or is it more likely that, while Abram's request is the work of the Jahvist who wrote in the ninth century, the prayer of Moses is that

of a forger who wrote Deuteronomy, a book revealed in the year 621?

We know little of Isaac's life; all the interest of the writer is focussed on his sons and especially on Jacob, who was to be the father of the twelve tribes, and who was to give his name to the nation. However, there was one point which could not be omitted, and which was of first-rate importance. It was absolutely necessary to say that the covenant had been renewed with Isaac, and that the promises made to his father held good for him. This is done in the episode of Isaac with Abimelech, when Isaac at first feels tempted to go to Egypt because of the famine, and he is told not to do so because the land which he inhabits is given to him and to his seed, and, says the Lord, "I will establish the oath which I swore unto Abraham thy father, and I will multiply thy seed as the stars of heaven . . . because that Abraham obeyed my voice, and kept my charge, my commandments, my statutes and my laws" (Genesis xxvi, 5). These words are the renewal of the charter given by the Lord to His chosen people, and it seems quite erroneous not to attribute these words to the main part of the book, but to call them an addition made by the latest contributor, the redactor.

Though I consider Genesis as the work of Moses, the fact of its having been written on tablets and put in a book form and transcribed, in Aramaic first and in Hebrew afterwards, may have given occasion to those who made those changes to insert explanatory glosses, to replace here and there geographical names, putting that which was in use in their time instead of the old one which would have been forgotten, or would not have been understood. Perhaps also some of the genealogies were carried further than they had been originally, for instance (xxxvi, 31) it is said: "and these are the kings that reigned in the land of Edom before there reigned any king over the children of Israel," where instead of these last words the LXX have "at Jerusalem."

One must remember also that with the history of Jacob the writer begins to have in view, not only one man, or one family, but the people which he was going to take to Canaan. The episode of Judah and Tamar, which seems a digression, explains why in the catalogue of Jacob's family the son of Judah, who seems to be his heir, is Perez. The genealogies of Edom in their present form contain probably late additions, but in the original they may have been part of them. Edom had much prospered, had become a nation which Israel would find on its way, and it was useful to show the Israelites how they were

their brethren, with whom they were not to contend, because Mount Seir had been given to Esau for a possession (Deuteronomy ii, 4).

With the arrival of Jacob's family in Egypt, we reach the country in which Moses lived, where he had been educated in particularly favourable circumstances, and in the wisdom of which he had been instructed. He had no difficulty in his intercourse with the Egyptians and his own countrymen, and I do not hesitate to say that he was the only author who could have written the history of Joseph such as we have it. That history is a running narrative of remarkable simplicity and beauty, containing some of the most striking pages of the Old Testament. It seems to me incredible that a sense of literary beauty did not prevent the critics from cutting it up into a considerable number of fragments written at several hundred years' interval. I shall not quote here sentences of which the first words are of the Elohist, the next of the Jahvist a hundred years earlier, and the end of the Elohist again. Let us take the two visits of the sons of Jacob. The first is said to be of the Elohist, the late writer of the seventh century, the second journey with the pathetic speech of Judah belongs to the Jahvist, a hundred years earlier. Yet it pre-supposes the first, it even alludes to it. Now, when the narrative of the second visit was written, what about the first? It certainly must have been described somewhere and the description has entirely disappeared. The second visit cannot be understood without the first, which is its introduction, and we are told that it was written a hundred years later. How strange are these two narratives: the Jahvist has no beginning, and the Elohist is a mere introduction followed by nothing! It is not possible to escape this extraordinary deduction, if it is contended that the narratives are inventions of two authors.

Moses alone could write the history of Joseph, and while he was in Egypt himself. There could not be any record of Joseph's life except with the Hebrews. Joseph had been a minister of foreign rulers, whose memory was detested by the Egyptians, who did what they could to wipe out the remembrance of the invaders. If Joseph had been an Egyptian, his biography would have been engraved on the walls of his tomb. But there was no rock tomb for him; he was embalmed in Egypt, he probably was put in a coffin, his body was preserved by his countrymen, but the account of his life, of his deeds, of his extraordinary exaltation from the rank of a slave to the second position in the kingdom, all that would be tradition preserved only by the Hebrews. And this tradition was undoubtedly very vivid, since

for these Hebrews Joseph must have been their great man, their hero. He had brought them to Egypt, to him they owed the position they had in Egypt, the favourable conditions in which they were placed and which allowed them to multiply and to become a nation. Joseph must have been a more popular figure among them than Abraham himself. And the tradition, such as it is recorded, is not one which is written down six or seven hundred years after the events, in a kingdom rent in two, under circumstances absolutely different. What interest could have Joseph's life to the Elohist writing in the Northern kingdom, in such troubled times as the seventh century?

Besides, this tradition is pictured with details so distinctly Egyptian in the dreams, in the names, in the numbers, that it cannot have been written anywhere else but in the country itself. A tradition six hundred years old retains the main lines of the events, but not the memory of small local details quite different from the conditions of the country in which the supposed writer lives. Moses wrote Joseph's life before he left Egypt. This agrees perfectly with the narrative and its character, and the hypothetical systems of the critics raise difficulties absolutely insuperable in regard of what we know about Egypt.

Joseph died at the age of 110 years, which in Egyptian is the limit of old age, and signifies as much as: much advanced in years and full of days. His last words were to remind his brethren that God would bring them to the land which he swore to Abraham, to Isaac, and to Jacob. And Joseph took an oath of the children of Israel. Thus the first book of the Old Testament ends with what it was written for, the solemn affirmation of the promise which had been sworn by God Himself.

The unity of Genesis is a subject which raises questions of such magnitude, that in a lecture like this I could only touch them lightly. What I hope to have shown to my hearers, is that criticism is not a High Court, the verdict of which is decisive. Criticism, especially philological criticism, is only a method of reaching the truth, a method which has often been very beneficial, but which in other cases has led us far astray. Let us study ancient documents like the books of the Old Testament in the light of the circumstances and events which they describe, of the people for whom they were written, of the country from which they originated, and I have the conviction, which I feel more strongly every day, that we shall find that these old books are really the work of the man whose name has been attached to them by a tradition of many centuries.

DISCUSSION.

The PRESIDENT said, I feel a great sympathy with one position of the writer of the paper to which we have just listened. I fear that I may be treading on the corns of some of my hearers, but I wish to make a general protest against the notion that a gentleman who calls himself a "professor," without any sufficient qualification, is thereby placed in a position of authority, and can make statements without a particle of evidence to prove them. I may be prejudiced in my view by my experience as a lawyer, but in court we are expected to give full proof in support of every assertion, and if we do not it is naturally assumed that it is because we cannot do so. A "professor," on the other hand, appears to consider himself relieved from any such anxiety. He seems to think that all that he has to do is to say that such and such is the case, and as he is a professor he cannot be contradicted or brought to book. If anyone brings forward an argument on the other side, the "professor" says that his opponent has made a mistake; but being a "professor," he does not consider himself obliged to substantiate even this assertion.

Our case is entirely different from that. Thus in the present instance, M. Naville finds himself obliged to answer statements which rested on no direct evidence:—certain portions of Scripture have been assigned to writers, the Jahvist, the Elohist, etc., of whose existence as men there is no proof at all. M. Naville might have made his position more clear if he had pointed out that the Jahvist, the Elohist, and so forth, are themselves merely the creations of certain "professors," rather than by assuming what the "professors" have chosen to lay down as if it were a fully established fact.

For my own part, I consider this assignment of different fragments of Genesis to a number of wholly imaginary authors, great rubbish. I do not understand the attitude of those men who base a whole theory of this kind on hypotheses for which there is no evidence whatsoever, and I am very glad that M. Naville began his paper by objecting to statements which were made without support.

I am glad to have relieved my own soul by this protest, but hope that it will not have hurt the feelings of any who are present.

I feel sure that all here will warmly support me in proposing a hearty vote of thanks to the author of the admirable paper to which you have listened, and to our Secretary for having read it.

Professor D. S. MARGOLIOUTH : I am sure you will all agree with me that my possessing the title of "professor" places me in a very advantageous position ; from what the President has told us, it is clear that I have an easy task before me : I can make any statement I choose without fear of contradiction or adverse argument. But I will not take full advantage of my position.

First of all, let me say how cordially I wish to second the vote of thanks to the author of the paper to which we have listened. Dr. Naville is one of the most eminent of Egyptologists ; in the very front rank. At an International Congress of Orientalists, many years ago, he was specially selected to make translations of a certain Egyptian book. I have had the pleasure of meeting him on several such congresses since,—at Geneva, in Paris, in Athens. At the last place, in the year 1912, he was chosen as a Member of the International Committee which was to decide on the place where the next Congress should be held, and which selected Oxford for the meeting of the coming September, before our first bulletin was issued. Since that decision was reached we have fallen on bad weather : the Chairman of the Committee, Dr. Driver, passed away, an irreparable loss, for he was certainly the first Hebraist of Great Britain, probably of his time. Our second bulletin announced the postponement of the Meeting till 1916, but I fear the hope that the Congress may be held next year is now almost as indistinct as that it should be held in this year. Even if it should be held, we are conscious that, owing to the War, the co-operation of European study has been broken up and will scarcely be resumed for some time after peace has been declared. Yet the black cloud has a silver lining, and it may be that in future we shall work with more courage and independence of thought, and may examine into the conclusions of the German critics with less fear of displeasing them. We are proud to see Lord Halsbury taking the Chair this afternoon, and I would thank him for the clear pronouncement which his unequalled legal experience has enabled him to give.

The essay to which we have listened is a most suggestive one, and there are two or three points in particular to which I would like to call attention.

First of all, Dr. Naville has endeavoured to enter into the mind of the author, and to place himself in the position of the man who wished to compose a book which has already existed for more than 2,000

years. He has endeavoured to account both for what the writer of the book has omitted and what he has admitted, and this is a good and right way in which to study any book.

Next, Dr. Naville has studied Genesis from the point of view of the first audience to which the book would appeal. Such an audience must be one which would be interested in Israel as a whole: Israel with a bright prospect before it, not with a long train of disasters behind it. Dr. Naville finds that this agrees with the traditional date, and whether he be right or wrong in his conclusions, this is the correct way of working; the critics should try to envisage the surroundings of the book.

I will not criticise Dr. Naville's suggestion that Genesis was originally written on clay tablets; and with regard to his other suggestion, that it was written in Babylonian, translated into Aramaic, and then into Hebrew, I do not feel free to discuss it, seeing that he is not present with us to reply. As Plato says: "A book always says the same thing, however often you consult it"; if the writer of the paper were present with us he could add to what he has written or could explain it further.

But if Dr. Naville were present, there is one question that I should much like to ask, since I cannot answer it myself, even in my capacity of an infallible "professor."

The book of Genesis gives us a number of etymologies of names, and these are Hebrew etymologies of Hebrew names; they do not mean what they are alleged to mean, except in Hebrew. Take, for example, the etymology of the name Jacob, which is given in Genesis xxvii, 36:—"Is he not rightly named Jacob, for he hath supplanted me these two times?" This means nothing in Babylonian or Aramaic, but it is most significant in Hebrew. I cannot imagine that that passage was written originally in any other language than Hebrew.

So again in Genesis xxxi, we have "the cairn which witnesses"; Laban called it *Jegarsahadutha*, but Jacob called it *Galeed*. Laban's name was Aramaic, Jacob's Hebrew, but both names meant the same thing. This chapter, therefore, also seems to have been written originally in Hebrew.

Then when we come to the life of Joseph, we find that whereas his parents call him by a Hebrew name with a Hebrew etymology, he is called in Egypt by an Egyptian name; we may not now be able to

explain the Egyptian meaning completely, but it is evidently Egyptian, and we are expressly told so. The names given to Eve and to Cain, on the other hand, are Hebrew, and the author has no occasion to tell us of the fact: he gives their interpretation.

I cannot conceive any valid answer to this argument. We have two Aramaic versions, and the significance of most of these proper names is lost in both of them, as it is in the other versions. But in Hebrew the meanings are precise.

With regard to the general tendency of the theory of the composite origin of Genesis, the essay has put it very clearly before us that the higher critical theory which assigns the book to seven different authors is a *reductio ad absurdum*. It seems to me scarcely possible to make any such separation of sources unless we have the original sources preserved to us. Some critics tell us that there is inconsistency between the first and second chapters of Genesis, and therefore that the two chapters should be assigned to two different authors. But in Kant's *Critique of Pure Reason*, the first and second chapters contradict each other directly, yet they were by the same author. Now an argument must hold always, or it does not hold at all. May I give an example, drawn from my own experience, indicating the uncertainty which attaches to a *a priori* argument of the kind employed? Perhaps I may be the more readily permitted to give it as it tells against myself. I was writing the lives of certain English Orientalists, for the *Dictionary of National Biography*, and among them that of Dr. Joseph White, my predecessor at Oxford. He had been called upon to give the Bampton Lectures, and, being much pressed for time, he obtained the assistance of a collaborator, the Rev. C. Badcock. Some, therefore, of the Lectures were by one author, and the others by another. The subject of the series was Mahommedanism and Christianity. In attempting to discriminate between the authors of the different Lectures, I assigned Lecture V to Professor White: it was on the Lives of Mahommed and Christ, and I thought that only an Orientalist such as he had the technical knowledge which that Lecture displayed. I also assigned the first Lecture to him, as I thought he would have been sure to have taken the first Lecture of the series himself. I think the reasoning was, as a *a priori* reasoning, quite sound; but the conclusions were wrong in both cases, and therefore I have been very distrustful of *a priori* reasoning ever since.

I beg to second most cordially the vote of thanks to Dr. Naville.

Dr. WACE : I entirely sympathise with the remarks made by Lord Halsbury about the alleged writers, J., E., and P.

The xivth chapter of Genesis seems to me to stand out like a block of granite to prove to subsequent generations that here we have a contemporaneous record, and, if this chapter is authentic, it carries with it the probability that the rest of the book is authentic likewise. These discussions appear to me to have a high practical interest, and I feel that I can almost agree with our President's designation for the theory that assigns Genesis to a number of imaginary authors—J., E., and P. and the rest—as “rubbish.” That which is of real concern to us is the question, “Are these stories which we find in Genesis, true or not ?” If they are not true then these books that we have been accustomed to regard as sacred are untrustworthy. Take, for example, what one writer has said in his remarks on the Pentateuch, that God's Covenant with the people of Israel began with Mt. Sinai; the Bible, on the contrary, states that it began four hundred years earlier, with Abraham. If we are to adopt the conclusions of the Higher Critics, we must face the fact that the Biblical narratives are not true, and that is a conclusion I cannot accept under any circumstances. As Voltaire put it, “If a sacred book contains falsehoods, can it be considered as sacred ?” Dr. Naville uses the expression “the forgery of Deuteronomy.” The Higher Critics object to the use of such a term. But they make a very grave charge against the unknown author to whom they ascribe it, when they represent him as having put into the mouth of Moses records, documents, and laws with which Moses had nothing to do.

The value of Dr. Naville's suggestions is that if they can be generally substantiated, then they prove that we have, in Genesis, contemporary documents. As to the authorship of the Pentateuch, we have a uniform tradition which has lasted down to within one or two hundred years ago, that the Pentateuch was written by Moses. This is evidence : it is the testimony of the Jewish race to the authorship of the books. In law, we are accustomed to ask, “In whose custody did the document lie ?” These documents have been throughout in the custody of the Jews. When the Speakers' Commentary was first written, a learned Hebraist, Dr. Brown, felt himself compelled to prove that Moses could write.

I would like to support most cordially the vote of thanks to the learned author of the paper.

The PRESIDENT put the vote to the meeting; after which Dr. WACE proposed, and Dr. T. G. PINCHES seconded, a hearty vote of thanks to Lord Halsbury for his presence in the Chair. Both votes were carried by acclamation.

RULES AS TO THE AWARDING OF THE GUNNING PRIZE

IN

1915.

1. The interest on the investment of the £500 under the bond of the late Doctor Gunning is applied every third year according to the Deed.

2. For the present, such interest is applied to a Prize awarded for an original essay on some subject embraced by the objects of the Institute; but this does not preclude its application in future in any other way which the Council may from time to time decide upon in accordance with the terms of the bond.

3. The class of subject for competition is chosen by the Council; and the first announcement of this choice is made at the Annual Summer Meeting of the Society in every third year and a circular respecting it is sent to all the Members and Associates within a month thereafter, giving all rules and needful directions for the competition.

4. The Prize is open for competition to all.

5. The interest for the three years ending 31st December, 1915, and for each subsequent period of three years, is applied as follows:—

- (a) in remunerating, if necessary, the person or persons who may be appointed to judge the respective merits of the essays sent in for competition;
- (b) for postage, printing, and other expenses attending the administration of the fund;
- (c) to the Prize, which is either paid in money or applied in the purchase of books or other suitable article or articles for presentation at the option of the prize-winner.

The amount of the Prize for the present year will be £40.

6. All essays are to be sent in not later than the 31st March next after the announcement of the Prize Competition, and must be addressed to the Secretary of the Institute at the Institute's office, and be typewritten and undersigned with a motto, which is to be repeated on a sealed envelope containing the writer's name. The length of the essay is not to exceed 15,000 words.

7. The decision as to the best essay rests with the Council, provided that no member of the Council, who is himself a candidate, do join in the voting; but, in lieu of itself deciding, the Council may appoint one or more judges.

8. The name of the successful candidate will be announced at the Annual Summer Meeting following that at which the Competition and its subject were first announced; and the Prize will then be handed to the successful competitor by the Chairman of the meeting.

9. The copyright in the successful essay is to belong to the Society of the Victoria Institute, who may publish it as they shall think fit or otherwise make use of it; but, at the request of the Author, they may allow him to embody it in any more comprehensive work that he may afterwards compose.

10. A copy of these Rules will be sent to all Candidates, who will be assumed to have assented to them by the sending in of an essay for competition.

The subject of the essay this year is:—

**“THE INFLUENCE OF CHRISTIANITY UPON OTHER
RELIGIOUS SYSTEMS.”**

Note.—The design of the paper is to exhibit—not the success of Christianity in winning converts from other faiths, but,—the manner and extent to which other Religions, while still remaining distinct systems, have yet modified their doctrines (including their eschatology), their customs and social and ethical standards, in consequence of Christian teaching.

It is desired that the essays should be precise in thought and language, that where possible authorities for statements should be given, and that generalities and declamation should be avoided.

By order of the Council,

E. WALTER MAUNDER,

Secretary.

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 Texas University, *Austin, Texas, U.S.A.*
 Wellington, *New Zealand, General Assembly Rooms Library*.
 Westminster College, *Fulton, Mo., U.S.A.*
 Yale University Library, *New Haven, Conn., U.S.A.*

SOCIETIES EXCHANGING TRANSACTIONS WITH
THE INSTITUTE.

American Academy of Arts and Sciences.
 American Geographical Society.
 American Geological Society.
 American Journal of Archæology.
 American Journal of Philology (Johns Hopkins Press).
 American Philosophical Society.
 Anthropological Society, New York.
 Anthropological Society, Washington.
 Archæological Institute of America.
 California University.
 Canadian Institute.
 Colonial Museum of New Zealand.
 Geographical Society of California.
 Geographical Society of the Pacific.
 Geological Society.
 Harvard Museum of Comp. Zoology.
 Manitoba Historical and Scientific Society.
 Missouri University.
 New Zealand Institute.
 Nova Scotian Inst. of Natural Science.
 Royal Asiatic Society, Bombay.
 Royal Colonial Institute.
 Royal Dublin Society.
 Royal Geographical Society.
 Royal Institution.
 Royal Irish Academy.
 The Royal Society.
 Royal Society of Canada.
 Royal United Service Institution.
 Smithsonian Institution (Washington).
 Société Scientifique du Chili.
 Society of Arts.
 Society of Biblical Literature, U.S.
 Soc. Bib. Lit. and Exeg., Boston.
 Sydney Museum, New South Wales.
 United States Bureau of Ethnology.
 United States Geological Survey.
 United States Government Geological and Geographical Survey.
 United States Government Reports.

HON. CORRESPONDING MEMBERS.

HOME.

- 1892 Clifford, Right Rev. A. D.D.
 1881 ¶ Guppy, H. B. Esq. M.B. F.G.S. Mem. Min. Soc. &c. *Rosario, Salcombe, S. Devon.*
 1903 Howorth, Sir Henry H. K.C.I.E. F.R.S. 30, *Collingham Place, S.W.*
 1888 ¶ Hughes, Prof. T. M'K. M.A. F.R.S. F.S.A. F.G.S.; Woodwardian Prof. of Geology, Cambridge, Trin. Coll. Camb. *Ravensworth, Brooklands Avenue, Cambridge.*
 1886 Mylne, Right Rev. L. G. D.D. *Alvechurch Rectory, Birmingham.*
 1903 ¶ Petrie, Prof. W. M. Flinders, D.C.L. Litt.D. LL.D. F.R.S. 18, *Well Road, Hampstead, N.W.*
 1889* ¶ Pinches, Theo. G. Esq. LL.D. *Sippara, 10, Oxford Road, Kilburn, N.W.*
 1889 ¶ Sayce, Rev. Prof. A. H. M.A. LL.D. Fellow and Tutor Queen's Coll. Oxford; 8, *Chalmers Crescent, Edinburgh.*
 1899 Turner, Sir William, V.D. M.B. LL.D. D.C.L. D.Sc. F.R.S. Prof. Anatomy, Univ. Edin. 6, *Eton Terrace, Edinburgh.*
 1890 Wakefield, Right Rev. G. R. Eden, D.D. Bishop of.
 1905 Woodward, Dr. Henry, F.R.S. F.G.S. 129, *Beaufort Street, Chelsea.*

FOREIGN.

- 1895 HIS MAJESTY KING MOMOLU MASSAQUOI, West Africa.
 1881 Abbe, Professor Cleveland, M.A. Assistant in the office of the Chief Signal Officer of the Weather Bureau, U.S.A.
 1883 Beckwith, The Right Rev. J. W. D.D. *U.S.A.*
 1884 Herzog, Right Rev. E. D.D. Bishop of the Old Catholic Ch. of Switzerland, *Berne.*
 1895 Hilprecht, Rev. Professor H. V. D.D. *Univ. of Pennsylvania, U.S.A.*
 1893 Hommel, Prof. Fritz, Ph.D. LL.D. Prof. of Semitic Languages in Univ. of Munich, *Leopolds Strasse, Munich.*
 1889 d'Hulst, Count Riamo, *Cairo.*
 1878 Jaggar, Right Rev. Bishop T. A. D.D. Bishop of S. Ohio, *Episcopal Rooms, Cincinnati, Ohio, U.S.A.*
 1895 Lugard, His Excellency Brigadier-General Sir F. D. K.C.M.G. D.S.O. Governor of Northern and Southern Nigeria.

- 1896 ¶ Macloskie, Prof. G., D.Sc. LL.D. Prof. Biology (Princeton), U.S.A.
- 1883 ¶ Maspero, Prof. Sir Gaston, K.C.M.G. D.C.L. *Collège de France, Cairo, Egypt; 24, Avenue de l'Observatoire, Paris.*
- 1904 Nansen, Prof. Fridtjof, D.Sc. LL.D. D.C.L. *Lysaker, Norway.*
- 1883 ¶ Naville, Prof. E. D.C.L. LL.D. F.S.A. *Malagny, Geneva, Switzerland.*
- 1888 North China, Right Rev. C. P. Scott, D.D. Bishop of, *Peking, North China.*
- 1912 ¶ Roget, Professor F. F. *Geneva.*
- 1890 Ottawa, Most Rev. C. Hamilton, D.D. D.C.L. Bishop of.
- 1895 Sabatier, Professor Armand, M.D. *Montpellier, France.*
- 1898 Stosch, Rev. Prof. D.D. 24, *Lutzow Street, Berlin.*
- 1904 ¶ Upham, Warren, Esq. M.A. D.Sc. F.G.S. Amer. Sec. Minnesota Historical Society.
- 1880 Vail, Right Rev. T. H. D.D. Bishop, *U.S.A.*
- 1898 Zahn, Rev. Prof. T. H. *Erlangen.*

ADDITIONAL HON. CORRESPONDENTS.

- Adams, Rev. Richard, M.A. T.C.D. 87, *Burntwood Lane, S.W.*
 Anderson, J. F. Esq. F.R.G.S. *Melrose, Curepipe, Mauritius.*
 Batchelor, W. Esq. 7, *Agnes Road, Northampton.*
 Brown, Rev. J. B. M.A. *St. James' Vicarage, Darwen.*
 Burke, Rev. R. G. M.A. LL.B. *Lilydale, Melbourne.*
 Caldecott, Rev. Professor A. M.A. D.D. D.Litt. 13, *Howden Road, S. Norwood, S.E.*
 Corbet, Frederick H. M. Esq. Barrister-at-Law, F.R.C.I. F.I.Inst.
 Hon. Executive Officer for Ceylon at the Imperial
 Institute, 42, *Kenilworth Avenue, Wimbledon.*
 Davies, Rev. R. V. Faithfull, M.A. 15, *Southend Road, Beckenham.*
 Davis, Rev. W. B. M.A. *Lupton, Torquay.*
 Dixon, Prof. J. M. *Washington Univ. St. Louis, Mo. U.S.A.*
 East, Rev. H. E. *Leithfield, Christchurch, New Zealand.*
 ¶Eells, Rev. M. M.A. *Union City, Mason Co. Washington, D.C., U.S.A.*
 Finn, Mrs. 75, *Brook Green, W.*
 Fleming, Rev. T. S. F.R.G.S. *Boston Spa, Leeds (JF).*
 ¶Frost, Edward P. Esq. D.L. J.P. *West Wratting Hall, Cambridge.*
 Gissing, Admiral C. E. R.N. (ret.) F.R.G.S. *United Service Club, S.W.; Homestead, Queen's Park, South Drive, Bournemouth.*
 Gubbins, Surgeon-General Sir W. L. M.D. K.C.B. M.V.O. K.H.S.
 Army Medical Staff, *War Office, 18, Victoria Street, S.W.; St. John's, Worcester Park, Surrey.*
 Harris, A. H. Esq. c/o I.M. Customs, *Hong Kong, China.*
 Harrison, Rev. A. J. B.D. LL.D. *Magdalen Lodge, North End, Newcastle.*
 Hassell, Joseph, Esq. *Brittany Lodge, London Road, St. Leonards.*
 Hechler, Rev. Prof. W. H. *City House Hotel, 160, City Road, E.C.*
 Hetherington, Rev. J. *St. Peter's Vicarage, Hull.*
 Hudson, Rev. Canon J. C. M.A. *Thornton Vicarage, Horn-castle.*
 Hutchinson, Rev. A. B. *Fukuoka, Japan.*
 Hutchinson, Rev. T. S. M.A. 13, *Aldridge Road Villas, Westbourne Park, W.*
 Kerr, Robert, Esq. 14, *Loudoun Terrace, Kelvininside, Glasgow.*
 ¶Kidd, Walter A. Esq. M.D. B.S. M.R.C.S. F.Z.S. 12, *Montpelier Row, Blackheath.*
 Kydd, Robert, Esq. 164, *Stobcross Street, Glasgow.*
 McLeod, Rev. R. F. *Walsden Vicarage, Todmorden.*
 Nutt, Rev. George, *The Rectory, Lhuidas Vale, Jamaica.*
 Oates, Rev. W. *Somerset East, South Africa.*

- O'Donel, G. H. Esq. *Mission School, Seoni Chappara, C.P. India.*
 Oliver, Rev. T. D.D. 29, *Crescent Road, Southport.*
 Oulton, Rev. R. C. M.A. B.D. 17, *Warrington Place, Dublin.*
 ¶Parker, Prof. H. W. 47, *7th Avenue, New York, N.Y. U.S.A.*
 Perowne, Edward S. M. Esq. F.S.A. 20 *Randolph Road, Maida Vale, W.*
 Petherick, Rev. G. W. B.A. *Hawksleigh, Southport.*
 Postlethwaite, J. Esq. F.G.S. *Cockermouth, Keswick and Penrith Railway, Keswick; 18, Eskin Street, Keswick.*
 Ragg, Rev. F. W. M.A. *The Manor House, Lower Boddington, Byfield.*
 Ramanathan, P. B.A., M.R.A.S., F.R.H.S., *Manónmani Villas, Chintadripet, Madras.*
 Redman, Rev. J. *Simla, India.*
 Robertson, Rev. Cavaliere Alex. D.D. *Ca' Struan, Ponte della Salute, Venice.*
 Shipham, Rev. Arthur, *The Mound, Matlock Bridge.*
 Simpson, Prof. J. Y. M.A. D.Sc. F.R.S.E. *New College, Edinburgh.*
 Stefansson, Jon, Esq. Ph.D.
 Storrs, Rev. W. T. B.D. *Vicarage, Sandown, I.W.*
 Thomas, Rev. James, *British and Foreign Bible Society, 146, Queen Victoria Street, E.C.*
 ¶Tisdall, Rev. W. St. Clair, M.A. D.D. *St. George's Vicarage, Deal.*
 Weidemann, Professor Alfred, Ph.D. 2, *König St. Bonn.*
 Whiteway, Rev. R. W. B. *Beulah House, Selby, Yorks.*
 Williams, W. Esq. Supt. Govt. Telegraphs, India (ret.), *Crofton, Combe Park, Bath.*
 Willis, R. N. Esq. M.B. 2, *Carlton Terrace, Rathmines, Dublin.*
 Willis, T. Gilbert, Esq. 4, *Kildare Street, Dublin.*
 Winslow, Rev. W. C. Ph.D. D.D. D.C.L. LL.D. D.Sc. 525, *Beacon Street, Boston, U.S.A.*
 ¶Zimmerman, Rev. Prof. Jeremiah, D.D. LL.D. L.H.D. 107, *South Avenue, Syracuse, N.Y. U.S.A.*
 ¶Zwemer, Rev. S. M. M.A. D.D. F.R.G.S. *Bahrein, Persian Gulf.*

OBJECTS, CONSTITUTION, AND BY-LAWS

OF

The Victoria Institute,

OR

Philosophical Society of Great Britain.

Adopted at the First Annual General Meeting of the Members and Associates
May 27th, 1867, with Revisions of 1874-75, 1910 and 1912.



§ I. *Objects.*

1. THE VICTORIA INSTITUTE, or PHILOSOPHICAL SOCIETY OF GREAT BRITAIN, is established for the purpose of promoting the following objects, viz.:—

First. To investigate fully and impartially the most important questions of Philosophy and Science, but more especially those that bear upon the great truths revealed in Holy Scripture; with the view of reconciling any apparent discrepancies between Christianity and Science.

Second. To associate together men of Science and authors who have already been engaged in such investigations, and all others who may be interested in them, in order to strengthen their efforts by association; and, by bringing together the results of such labours, after full discussion, in the printed Transactions of an Institution: to give greater force and influence to proofs and arguments which might be little known, or even disregarded, if put forward merely by individuals.

Third. To consider the mutual bearings of the various scientific conclusions arrived at in the several distinct branches into which Science is now divided, in order to get rid of contradictions and conflicting hypotheses, and thus promote the real advancement of true science; and to examine and discuss all supposed scientific results with reference to final causes, and the more comprehensive and fundamental principles of Philosophy proper, based upon faith in the existence of one Eternal God, who, in His wisdom, created all things very good.

Fourth. To publish Papers read before the Society in furtherance of the above objects, along with full reports of the discussions thereon, in the form of a Journal, or as the Transactions of the Institute.

Fifth. When subjects have been fully discussed, to make the results known by means of Lectures of a more popular kind, and to publish such Lectures.

Sixth. To publish English translations of important foreign works of real scientific and philosophical value, especially those bearing upon the relation between the Scriptures and Science; and to co-operate with other philosophical societies at home and abroad, which are now or may hereafter be formed, in the interest of Scriptural truth and of real science, and generally in furtherance of the objects of this Society.

Seventh. To found a Library and Reading Rooms for the use of the Members and Associates of the Institute, combining the principal advantages of a Literary Club.

§ II. *Constitution.*

1. The Society shall consist of Members and Associates, who in future shall be elected as hereinafter set forth.

2. The government of the Society shall be vested in a Council (whose Members shall be chosen from among the Members and Associates of the Society and be professedly Christians), consisting of a President, two or more [not exceeding seven] Vice-Presidents, an

Honorary Treasurer, and twelve or more [not exceeding twenty-four] Ordinary Members of Council. The Trustees for the time being of the funds of the Institute shall be *ex officio* Members of the Council.

3. The President, Vice-Presidents and Honorary Officers [other than the Trustees for the time being of the funds of the Institute] shall be elected annually at the Annual General Meeting of the Institute, with power to the Council to fill up any casual vacancies.

At the Annual General Meeting in each year, one-third of the Ordinary Members of Council [or if their number be not a multiple of three then the number nearest to one-third] shall also retire, in order of seniority of election to the Council, and be eligible for re-election: as between Members of equal seniority the Members to retire shall be chosen from among them by ballot [unless such Members shall agree between themselves]. Vacancies thus created shall be filled up at the Annual General Meeting, but any casual vacancies may be filled up by the Council.

4. For the annual elections taking place under Rule 3, nominations may be made by Members of the Institute and sent to the Secretary not later than December 1st in any year. The Council may also nominate for vacancies, and all nominations shall be submitted to the Members and Associates at the time when notice of the Annual General Meeting is posted.

If more nominations are made than there are vacancies on the Council the election shall be by ballot.

5. Any person desirous of becoming a Member or Associate shall send to the Secretary an application for admission, which shall be signed by one Member or Associate recommending the Candidate for admission.

6. Upon such application being transmitted to the Secretary, the candidate may be elected by the Council, and enrolled as a Member or Associate of the Victoria Institute, in such a manner as the Council may deem proper.

7. Application for admission to join the Institute being made as before laid down, such application shall be considered as *ipso facto* pledging all who are thereupon admitted as Members or Associates to

observe the Rules and By-laws of the Society, and as indicative of their desire and intention to further its objects and interests ; and it is also to be understood that only such as are professedly Christians are entitled to become Members.

8. Each Member shall pay an Entrance Fee of One Guinea, which the Council may from time to time suspend, and an Annual Contribution of Two Guineas. A Donation of Twenty Guineas shall constitute the donor a Life Member.

9. Each Associate shall pay an Annual Contribution of One Guinea. A Donation of Ten Guineas shall constitute the donor a Life Associate.

10. The Annual Contributions shall be considered as due in advance on the 1st day of January in each year, or, by resolution of the Council, on the anniversary of election, and shall be paid within three months after that date ; or, in the case of new admissions within three months after election.

11. Any Member or Associate who contributes a donation in one sum of not less than Sixty Guineas to the funds of the Institute shall be enrolled as a Vice-Patron thereof, and will thus also become a Life Member or Life Associate, as the case may be.

12. Should any member of the Royal Family hereafter become the Patron, or a Vice-Patron, or Member of the Institute, the connexion shall be regarded as purely Honorary ; and none of the Rules and By-laws relating to donations, annual contributions or obligations to serve in any office of the Society, shall be considered as applicable to such personages of Royal Blood.

13. Any Member or Associate may withdraw from the Society at any time, by signifying a desire to do so by letter, addressed to the Secretary ; but such shall be liable for the contribution of the current year, and shall continue liable for the annual contribution, until all sums due to the Society from such Member or Associate shall have been paid, and all books or other property borrowed from the Society shall have been returned or replaced.

14. Should there appear cause, in the opinion of the Council, for the exclusion from the Society of any Member or Associate, a private intimation may be made by direction of the Council, in order to give such Member or Associate an opportunity of withdrawing from the

Society ; but, if deemed necessary by the Council, a Special General Meeting of Members shall be called for the purpose of considering the propriety of expelling any such person : whereat, if eleven or more Members shall ballot, and a majority of those balloting shall vote that such person be expelled, he shall be expelled accordingly. One month's notice, at least, shall be given to the Members of any such Special General Meeting.

15. Non-resident Members and Associates, or others desirous of promoting the objects and interests of the Institute, may be elected by the Council to act as corresponding Members abroad, or as Honorary Local Secretaries, if within the United Kingdom, under such arrangements as the Council may deem advisable.

16. The whole property and effects of the Society shall be vested in two or more Trustees, who shall be chosen at a General Meeting of the Society. The Trustees are empowered to invest such sums as the Council may, from time to time, place in their hands, in, or upon any of the Stocks, Funds, or Securities, for the time being, authorized by statute for the investment of trust funds by trustees, and shall have the usual powers of trustees in regard thereto. [The President, the Hon. Treasurer, and the Secretary may officially give effect to such resolutions as a General Meeting may pass in regard thereto.]

17. All moneys received on account of the Institute shall be duly paid to its credit at the Bankers, and all cheques shall be drawn, under authority of the Council, and shall be signed by any two of the following, the Chairman of Council, the Honorary Treasurer and the Secretary.

18. The accounts shall be audited annually, by a Committee, consisting of two Members or Associates,—one of whom may be on the Council,—to be elected at an Ordinary Meeting of the Society preceding the Anniversary Meeting. This Committee shall make a written Report to the Council at the first Meeting after such audit, and also to the Institute, upon the day of the Annual General Meeting,—stating the balance in the Treasurer's hands and the general state of the funds of the Institute.

§ III. *By-laws* (Privileges).

1. A Member or Associate, when elected, shall be so informed by the Secretary in a printed copy of the letters, Form B, in the Appendix.

2. Members and Associates shall not be entitled to any privileges, or have the right to be present, or to vote at any of the Meetings of the Society, till they have paid the contributions due by them.

3. Annual subscriptions shall be considered as in arrear, if not paid within three months after they become due.

4. Should any annual subscription remain in arrear for six months the Secretary shall forward to the Member or Associate from whom the subscription is due, a letter, Form D, unless such Member or Associate reside out of the United Kingdom, in which case the Form D shall not be sent unless the subscription continues unpaid for twelve months.

5. If any arrears be not paid within twelve months, the Council shall use their discretion in erasing the name of the defaulter from the list of Members or Associates.

6. Members shall be entitled to introduce two Visitors at the Ordinary Meetings of the Society; and to have sent to them a copy of all the Papers read before the Society, which may be printed in its Transactions or otherwise, and of all other official documents which the Council may cause to be printed for the Society; they will also be entitled to a copy of all such translations of foreign works or other books as are published under the auspices of the Society in furtherance of the Sixth Object (§ I.).

7. Associates may introduce two Visitors at the Ordinary Meetings, and shall be entitled to all the minor publications of the Society, and to a copy of its Transactions during the period of their being Associates, but not to the translations of foreign works or other books above referred to.* It shall, however, be competent to the Council of the Society, when its funds will admit of it, to issue the other publications of the Society to Associates, being ministers of religion, either gratuitously or at as small a charge as the Council may deem proper.

8. When it shall be found necessary to send the letter, Form D, to any Member or Associate who may be in arrear, the printed papers and other publications of the Society shall cease to be sent to such Member or Associate till the arrears are paid; and, until then, he shall not be

* These, as well as the Transactions issued in the years previous to their joining, may be purchased at such prices as the Council may determine.

allowed to attend any Meeting of the Society, nor have access to any public rooms which may be in its occupation.

9. The Library shall be under the management and direction of the Council, who are empowered to designate such works as shall not be allowed to circulate.

10. Members may borrow books from the Library, and have not more than three volumes in their possession at the same time ; pamphlets and periodical publications are not to be kept above fourteen days, nor any other book above three weeks. Associates may see books in the Library during office hours.

11. Members who may borrow books from the Library shall be answerable for the full value of any work that is lost or injured.

12. Periodical publications shall remain on the table for a month, other books for a fortnight, after they are received.

13. When a book or pamphlet is wanted, and has been the stipulated time in the possession of any Member, the Secretary shall request its return, and a fine of threepence a day shall be incurred for every day it may be detained, which fine shall commence on the third day after the transmission of the notice in the case of town Members, and after the sixth day in the case of country Members ; and until the return of such works, and the discharge of all fines incurred, no further issue of books shall be permitted to the Member applied to.

14. The books shall be ordered in for inspection at such times as the Council shall appoint, and a fine of half-a-crown shall be incurred for neglecting to send in books by the time required in the notice.

15. A book shall lie on the Library table in which Members may insert, for the consideration of the Council, the titles of such works as they desire to be purchased for the Institute.

§ IV. *By-laws* (General and Ordinary Meetings).

1. A General Meeting of Members and Associates shall be held annually on 24th May (being Her late Majesty's birthday, and the Society's anniversary), or on the Monday following, or on such other day as the Council may determine as most convenient, to receive the Report

of the Council on the state of the Society, and to deliberate thereon ; to discuss and determine such matters as may be brought forward relative to the affairs of the Society ; and to elect Members of Council and Officers for the ensuing year.

2. The Council shall call a Special General Meeting of the Members and Associates, when it seems to them necessary, or when required to do so by requisition, signed by not less than ten Members and Associates specifying the question intended to be submitted to such Meeting. Two weeks' notice must be given of any such Special General Meeting ; and only the subjects of which notice has been given shall be discussed thereat. No alteration in, or addition to, the existing rules shall be made except at such Special General Meeting.

3. The Ordinary Meetings of the Society shall usually be held on the first and third Monday afternoons or evenings in each month, from January to June inclusive and in December : or on such other afternoons or evenings as the Council may determine to be convenient : and a printed card of the Meetings for each Session shall be forwarded to each Member and Associate.

4. At the Ordinary Meetings the order of proceeding shall be as follows : The President, or one of the Vice-Presidents, or a Member of the Council or someone specially invited by the Council shall take the chair at the time fixed for the commencement of the Meeting ; the minutes of the last Ordinary Meeting shall be read by the Secretary, and, if found correct, shall be signed by the Chairman ; the names of new Members and Associates shall be read ; the presents made to the Society since their last Meeting shall be announced ; and any other communications which the Council think desirable shall be made to the Meeting. After which, the Paper or Papers intended for discussion shall be announced and read, and the persons present shall be invited by the Chairman to make any observations thereon which they may wish to offer.

The claims of Members and Associates to take part in a discussion are prior to those of Visitors. The latter, when desiring to speak upon any Paper, must first send their cards to the Chairman and ask permission, (unless they have been specially invited by the Council to attend, and join in considering the subject before the Meeting, or are called upon by the Chairman).

5. The Papers read before the Society, and the discussions thereon fully reported, shall be printed by order of the Council ; or, if not, the Council shall, if they see fit, state the grounds upon which this Rule has been departed from, in the printed Journal or Transactions of the Society.

6. The Council may at their discretion authorize Papers of a general kind to be read at any of the Ordinary Meetings, either as introductory lectures upon subjects proper to be afterwards discussed, or as the results of discussions which have taken place, in furtherance of the Fifth Object (§ I).

7. The Council may, at its discretion, request any Lecturer or Author of a paper to be read at any Meeting, previously to submit an outline of the proposed method of treating his subject.

8. At the Ordinary Meetings no question relating to the Rules or General Management of the affairs of the Society shall be introduced, discussed or determined.

§ V. *By-laws* (Council Meetings).

1. The Council shall meet at least once every month from October to June inclusive, or at any other time and on such days as they may deem expedient. The President, or any three Members of the Council, may at any time call a Special Meeting, to which the whole Council shall be summoned.

2. At Council Meetings three shall be a quorum ; the decision of the majority shall be considered as the decision of the Meeting, and the Chairman shall have a casting vote.

3. Minutes of the Proceedings shall be taken by the Secretary, or, in case of his absence, by some Member present, whom the Chairman may appoint ; which Minutes shall afterwards be entered in a minute-book kept for that purpose, and read at the next Meeting of the Council, when, if found correct, they shall be signed by the Chairman.

§ VI. *By-laws* (Papers).

1. Papers presented to be read before the Society shall, when read, be considered as the property of the Society, unless there shall have been any previous engagement with its author to the contrary ; and the Council may cause the same to be published in any way and at any time they may think proper after having been read. If a Paper be not read, it shall be returned to the author ; and, if a Paper be not published

within a reasonable time after having been read, the author shall be entitled himself to publish it, and he may borrow it for that purpose.

2. When a Paper is sent to the Society for the purpose of being read, it shall be laid before the Council, who may refer it to two of that body, or of the other Members or Associates of the Society whom they may select, for their opinions as to the character of the Paper and its fitness or otherwise for being read before the Society, which they shall state as briefly as may be, in writing, along with the grounds of their respective opinions. Should one of such opinions be adverse to the Paper and against its being read before the Society, then it shall be referred to some other referee, who is unaware of the opinion already pronounced upon the Paper, in order that he may state his opinion upon it in like manner. Should this opinion be adverse to the Paper, the Council shall then consult and decide whether the Paper shall be rejected or read; and, if rejected, the Paper shall be returned to the author with an intimation of the purport of the adverse opinions which have been given with respect to it; but the names of the referees are not to be communicated to him, unless with their consent or by order of the Council. All such references and communications are to be regarded as confidential, except in so far as the Council may please to direct otherwise.

3. The Council may authorize Papers to be read without such previous reference for an opinion thereon; and when a paper has been referred, and the opinion is in favour of its being read in whole or in part, the Council shall then cause it to be placed in the List of Papers to be so read accordingly, and the author shall receive due notice of the day fixed for its reading.

4. The authors of Papers read before the Society shall, if they desire it, be presented with twenty-five separate copies of their Paper, with the discussion thereon, or with such other number as may be determined upon by the Council.

§ VII. *By-laws* (General).

1. The government of the Society, and the management of its concerns are entrusted to the Council, subject to no other restrictions than are herein imposed, and to no other interference than may arise from the acts of Members and Associates in General Meeting assembled.

2. With respect to the duties of the President, Vice-Presidents and other Officers and Members of Council, and any other matters not herein specially provided for, the Council may make any regulations and

arrangements as they deem proper, and as shall appear to them most conducive to the good government and management of the Society, and the promotion of its objects. And the Council may hire apartments, and appoint persons, whether Members of the Council, or Members or Associates of the Institute, or not, to be salaried officers, clerks, or servants, for carrying on the necessary business of the Society ; and may allow them respectively such salaries, gratuities, and privileges, as to them, the Council, may seem proper ; and they may suspend any such officer, clerk or servant from his office and duties, whenever there shall seem to them occasion ; provided always, that every such appointment or suspension shall be reported by the Council to the next ensuing General Meeting of the Members and Associates to be then confirmed or otherwise as such Meeting may think fit.

FORM A.

FORM OF APPLICATION for the Admission of Vice-Patrons, Members, or Associates of the
VICTORIA INSTITUTE.

[Date] _____ 19

*I hereby desire to be enrolled a**

of the VICTORIA

INSTITUTE, OR PHILOSOPHICAL SOCIETY OF GREAT BRITAIN.

* Here insert Vice-Patron, or Member, or Life Member, or Associate, or Life Associate.	{	Candidate's ordinary Signature, and full name, if necessary.	{	_____
		Title, Profession, University degree, &c., or other distinction.	{	_____
		Address		_____
		If an Author, the name of the Candidate's works may be here stated.	{	_____

When filled this form is to be sent to the

Honorary Secretary of the VICTORIA INSTITUTE,
1, Central Buildings, Westminster, S.W.

FORM B.

SIR,

19 .

I have the pleasure to inform you, with reference to your application dated the _____, that you have duly been elected a _____ of the VICTORIA INSTITUTE, OR PHILOSOPHICAL SOCIETY OF GREAT BRITAIN.

I have the honour to be, Sir,
Your faithful Servant,

Sec.

FORM C.

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* Please pay Messrs. BARCLAY & CO., 1, Pall Mall East, S.W., my Annual Contribution of TWO GUINEAS to the VICTORIA INSTITUTE, due on the 1st of January, 19____, and the same amount on that day in every succeeding year, until further notice.

I am,
Your obedient Servant,

19 .

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FORM D.

SIR,

19 .

Permit me to remind you that your subscription to the Institute for this year (_____) has not yet been paid. I shall be grateful for an early remittance.

Yours faithfully,

Sec.

GENERAL INDEX TO THE TRANSACTIONS OF THE VICTORIA INSTITUTE.

A GENERAL INDEX to the first forty-three volumes of the Journal of Transactions of the Institute (No. I, 1865, to No. XLIII, 1911), arranged alphabetically under both the names of the Authors and the Subjects, was issued with volume XLIV, and repeated with the two subsequent volumes. The Index is not repeated in the present volume, which is already a large one, as it appears scarcely necessary to do so every year, but it will be repeated, enlarged and brought up to date, in a subsequent volume. In the meantime, the present General Index can be obtained from the Secretary in separate form, bound in cloth, for one shilling the copy.

CONTENTS OF THE LAST FOUR VOLUMES.

VOL. XLIV.

Annual Address. Modern Unrest and the Bible. By SIR ANDREW WINGATE, K.C.I.E.
The Genealogies of our Lord. By MRS. A. S. LEWIS, LL.D.
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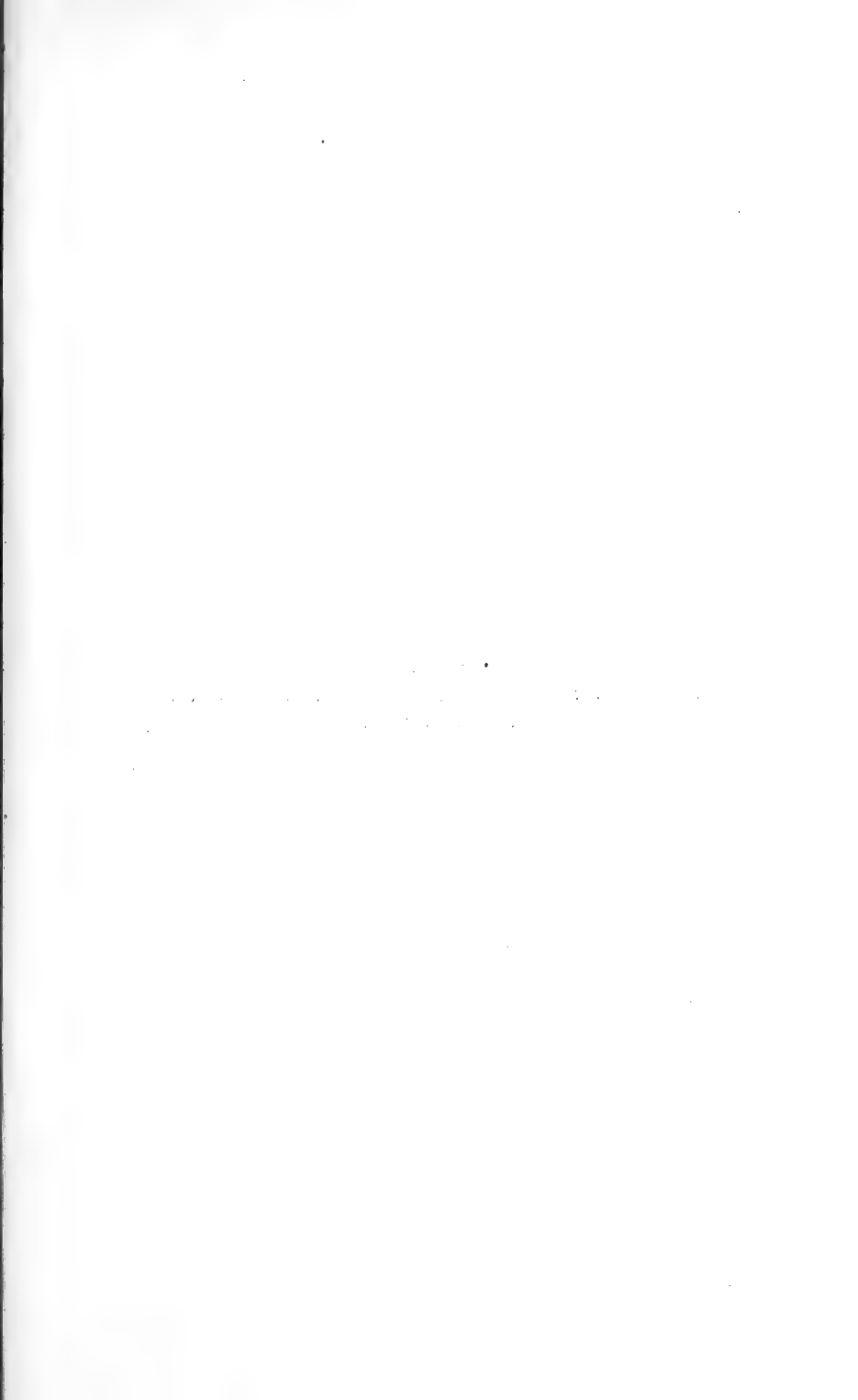
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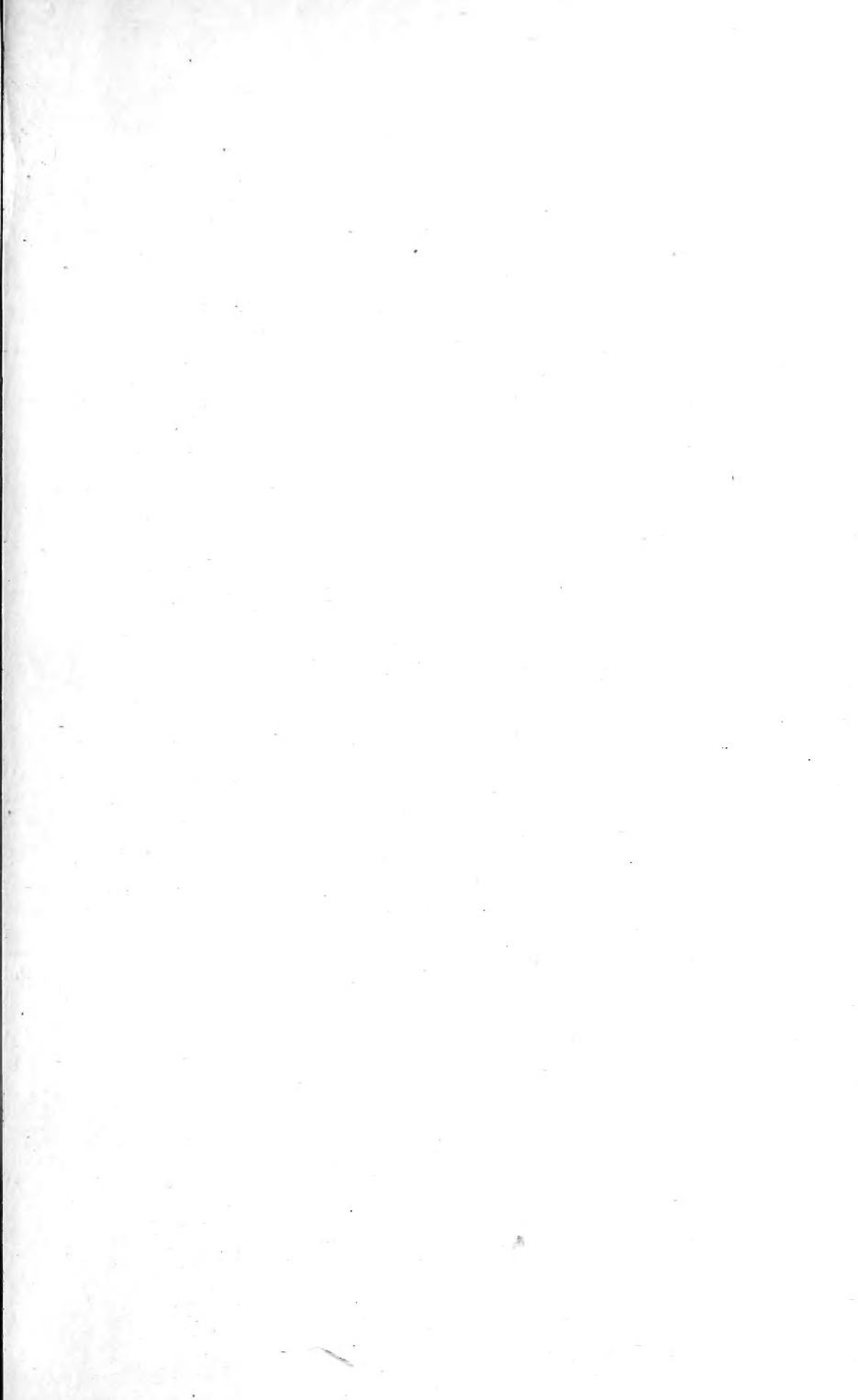
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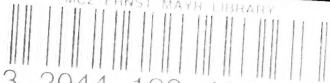
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